Soundtrack
User Manual

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An Introduction to Soundtrack

Soundtrack gives you the tools you need to create high-quality soundtracks for your video productions.

Music projects that until recently would have required an array of professional studio equipment can now be completed in a home or project studio, using a personal computer and readily available resources. A computer with a fast processor and enough RAM can serve as a workstation for recording, arranging, mixing, and producing complete music projects that can be played back on the computer, burned on a CD or DVD, or distributed over the Internet.

For digital video editors, this development allows unprecedented opportunities for increasing creative control over the music for video projects. Currently, most video projects either use stock music clips from music libraries or rely on outside music production houses to create original scores. Now, using digital music tools and applications, video editors, including those with no musical training or experience, can create high-quality soundtracks for their video projects with the same computer they used to assemble and edit their video.

What Is Soundtrack?

Soundtrack is a music application built specifically for Mac OS X. Using Soundtrack, even non-musicians can create professional-sounding, royalty-free soundtracks for Final Cut Express video projects.

Soundtrack lets you build musical arrangements using prerecorded audio files called *loops*. Loops contain rhythmic patterns that you can extend to fill any amount of time. In a Soundtrack project, you can combine and arrange loops and non-looping audio files, add professional-quality effects, mix your music in stereo, and export the final mix to a standard audio file that can be played on any multimedia-equipped computer or imported into Final Cut Express.

Soundtrack includes the following features:

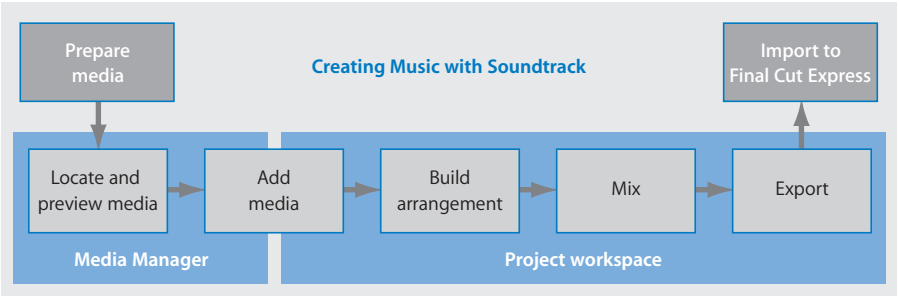
- *Work in real time:* You can work on Soundtrack projects in real time, adding and editing audio while the project is playing, and hear the results of your changes immediately.
- *Use existing loop libraries:* Soundtrack includes a large collection of Apple Loops and is compatible with a wide variety of existing loop libraries, including those created for use with Sonic Foundry's ACID.
- *Mix loops recorded at different tempos and keys:* Soundtrack automatically matches loops to the project tempo and key, allowing you to freely combine loops from different sources in a single project.
- *Locate and preview files easily:* The Media and Effects Manager, a part of the Soundtrack interface, provides powerful file browsing and search features, making it easy to locate loops and one-shots by instrument, genre, mood, or other search criteria.
- *Add professional-quality effects:* Soundtrack includes high-quality effects plug-ins that you can use in your projects. You can also install third-party effects in the Audio Units plug-in format.
- *Use Final Cut Express scoring markers:* When using Soundtrack to score a video that includes Final Cut Express scoring markers, Soundtrack recognizes and displays the scoring markers in the Timeline. You can also add time markers and use them as cue points to precisely synchronize the music to the action.
- *Edit nondestructively:* All of the edits you make in Soundtrack are nondestructive, allowing you to freely try out changes to audio files without altering the original file and to use the same file in multiple projects.
- *Record and edit automation:* You can record movements to sliders and other onscreen controls, play back the automation, and edit it in the Timeline.
- *Audio recording capability:* You can record audio directly in tracks in the Soundtrack Timeline, including recording multiple takes.

Creating Music with Soundtrack

Making use of the advanced digital audio capabilities of Macintosh computers and Mac OS X, Soundtrack gives you a simple way to create music: After preparing the video in Final Cut Express, you add media (audio and video files) to tracks in the Soundtrack Timeline, edit and adjust your audio, and then add effects and automation to create a final mix that you can export and distribute.

To create your Soundtrack projects, you use prerecorded loops and other audio files. You can choose the style, tempo, and instrumentation of your music, and arrange musical events in time, even with no musical experience or training. In short, Soundtrack gives you greater creative control over the sound of your music than you would get using stock music libraries or relying on an outside music production facility.

The following steps outline a typical Soundtrack work session. You won't always proceed in a strict linear order, and you may choose to overlap some steps. For example, you may add more audio after starting to build your arrangement in the Timeline, or you may make changes to the arrangement after you begin mixing.



Step 1: Prepare the video

If you're scoring a video, you'll want to determine the length of the scenes to be scored, what mood and style of music are appropriate for the video, and how the music will be synchronized with the action at specific points. You can prepare the video in Final Cut Express by adding scoring markers, which appear when you import the video into Soundtrack.

Step 2: Add media

Once you're ready, you begin by selecting the audio files you want to use in your project. You can preview audio files in the Media and Effects Manager, and then add them to the project Timeline. If you're scoring a video, you import the video file into the project so that you can view it as you create your score, and synchronize the music with the video.

Step 3: Build the arrangement
You build the arrangement by continuing to add audio clips to the Timeline, moving and resizing them to create rhythmic patterns and define sections, and editing them in a variety of ways. You can build drum and rhythm tracks to lay out the form and set the basic mood, and then layer additional parts over the rhythm tracks to fill out the arrangement. You can alter the mood and add interest to your music by changing the instrumentation, changing tempo and key, and adding lead parts or sound effects to create moments of tension and release.

Step 4: Mix
Once the arrangement is complete, you mix the project. Mixing involves shaping the overall sound, balancing different parts of the music, and bringing focus to the key moments in your project. You can further shape the sound of the project by adding effects (such as EQ, reverb, delay, chorus, and distortion) and using automation to create dynamic changes. When you finish mixing, you have one or more final mixes that you can export and distribute.

Step 5: Export and distribute
When your project is complete, you export the final mix as a stereo audio file, which can be played back on any multimedia-equipped computer. You can also export individual tracks as audio files. Your exported audio files can be imported into Final Cut Express or into another audio application such as Logic, burned on a CD or DVD, and distributed in a variety of ways. You can also export a project containing a video file as a QuickTime movie file.

Resources for Learning About Soundtrack

This manual describes the Soundtrack interface, commands, and menus, and gives step-by-step instructions for creating Soundtrack projects and for accomplishing specific tasks. It also includes information on setting up your system and on audio basics. It is designed to provide the information you need to get up to speed quickly so you can take full advantage of the intuitive interface and powerful features of Soundtrack.

If you want to start by learning how to set up audio hardware to use with Soundtrack, read Chapter 2, "Setting Up Your System," on page 21. If you want to learn about the features and controls in the Soundtrack interface, read Chapter 3, "The Soundtrack Interface," on page 31. If you want to jump right in and start using the application, skip ahead to Chapter 4, "Getting Started with Soundtrack," on page 47.

In addition to this manual, Soundtrack provides other sources of support.

Soundtrack Onscreen User Manual

The Soundtrack onscreen user manual allows you to access information directly onscreen while you're working in Soundtrack. To view this information, choose Help > Soundtrack User Manual. The Soundtrack onscreen user manual is a fully hyperlinked version of the *Soundtrack User Manual*, enhanced with many features that make locating information quick and easy.

- The homepage provides quick access to various features, including Late-Breaking News, the index, and the Soundtrack website.
- A comprehensive bookmark list allows you to quickly choose what you want to see and takes you there as soon as you click the link.

In addition to these navigational tools, the Soundtrack onscreen user manual gives you other means to locate information quickly:

- All cross-references in the text are linked. You can click any cross-reference and jump immediately to that location. Then, you can use the Preview Back button to return to where you were before you clicked the cross-reference.
- The table of contents and index are also linked. If you click an entry in either of these sections, you jump directly to that section of the user manual.
- You can also use the Find dialog to search the text for specific words or a phrase.

Apple Websites

There are a variety of Apple websites that you can visit to find additional information.

Soundtrack Website

For general information and updates, as well as the latest news on Soundtrack, go to:

- http://www.apple.com/finalcutexpress/soundtrack.html

Apple Service and Support Website

For software updates and answers to the most frequently asked questions for all Apple products, including Soundtrack, go to:

- http://www.apple.com/support/soundtrack

You'll also have access to product specifications, reference documentation, and Apple and third-party product technical articles.

Other Apple Websites

Start at the Apple homepage to find the latest and greatest information about Apple products:

- http://www.apple.com

QuickTime is industry-standard technology for handling video, sound, animation, graphics, text, music, and 360-degree virtual reality (VR) scenes. QuickTime provides a high level of performance, compatibility, and quality for delivering digital video. Go to the QuickTime website for information on the types of media supported, a tour of the QuickTime interface, specifications, and more:

- http://www.apple.com/quicktime

FireWire is one of the fastest peripheral standards ever developed, which makes it great for use with multimedia peripherals, such as video camcorders and the latest high-speed hard disk drives. Visit this website for information about FireWire technology and available third-party FireWire products:

- http://www.apple.com/firewire

For information about seminars, events, and third-party tools used in web publishing, design and print, music and audio, desktop movies, digital imaging, and the media arts, go to:

- http://www.apple.com/pro

For resources, stories, and information about projects developed by users in education using Apple software, including Soundtrack, go to:

- http://www.apple.com/education

Go to the Apple Store to buy software, hardware, and accessories direct from Apple and to find special promotions and deals that include third-party hardware and software products:

- http://www.apple.com/store

Audio and Music Basics

1

You can create professional-sounding music projects in Soundtrack without any background or training in music. This chapter describes the basic audio and music concepts you need to know to get started.

Basic Audio Concepts

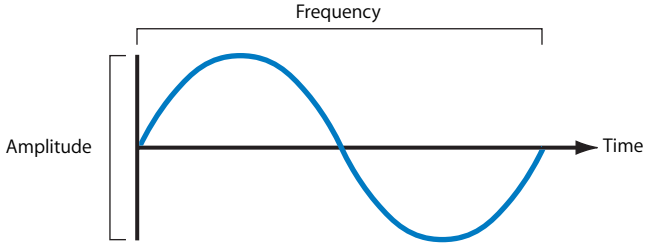
In order to understand how you can work with audio files and use the controls, effects, and envelopes included in Soundtrack, it's helpful to know some basic terms and concepts about audio.

Sound Waves

What we hear as sounds are vibrations traveling through the air as *sound waves*. Sound waves move through the air like ripples in a pond, radiating outward from the sound's source in a regular pattern of compression and rarefaction.

Frequency and Amplitude

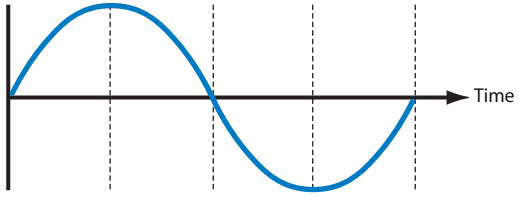
The rate at which a sound wave repeats (the time between two peaks of the wave) is called its *frequency*. Frequency is expressed in cycles per second, or Hertz (Hz). We hear a sound's frequency as being relatively high (like a flute, a child's voice, or a train whistle) or low (like a bass guitar, a man's voice, or the rumble of a train on the tracks). The range of frequencies audible to human beings is roughly 20 Hz–20 kilohertz (kHz).



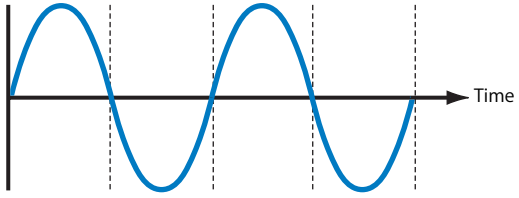
The depth or intensity of a sound is called its *amplitude,* and is expressed in decibels (dB). We hear amplitude as the *volume* or loudness of a sound. The range of audible loudness is roughly 0–130 dB. Higher decibel levels are painful to human hearing.

Musical Sounds

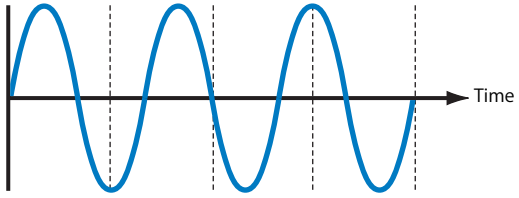
Musical sounds typically have a regular frequency, which we hear as the sound's *pitch.* Pitch is expressed using musical notes, such as C, Eb, and F#. What we hear as the pitch is only the lowest, strongest part of the sound wave, called the *fundamental.* Every musical sound also has higher, softer parts called *overtones* or *harmonics,* which occur at regular multiples of the fundamental frequency. We don't hear the harmonics as distinct pitches, but rather as the tone color (also called the *timbre*) of the sound, which lets us distinguish one instrument or voice from another, even when both are playing the same pitch. When you turn up the treble on your stereo, or adjust an EQ effect, you raise the volume of some of the harmonics in the music, but don't change the fundamental frequencies.



Fundamental



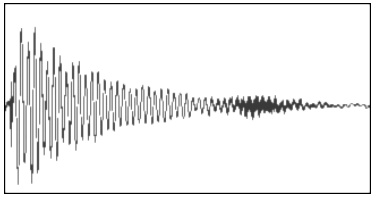
First harmonic



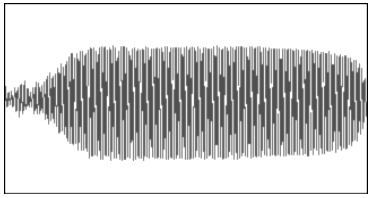
Second harmonic

Envelopes

Another aspect of sound that helps us to distinguish between instruments and voices playing the same pitch is a sound's *envelope*. Every note played on a musical instrument has a distinct curve of rising and falling volume over time. Sounds produced by some instruments, particularly drums and other percussion, start at a high volume level but quickly decrease to a much lower level, and die away to silence quickly. Sounds produced by other instruments, for example, a violin or a trumpet, can be sustained at the same volume level, and can be raised or lowered in volume while being sustained. This volume curve is called the sound's envelope, and acts like a signature to help our ears recognize what instrument is producing the sound.



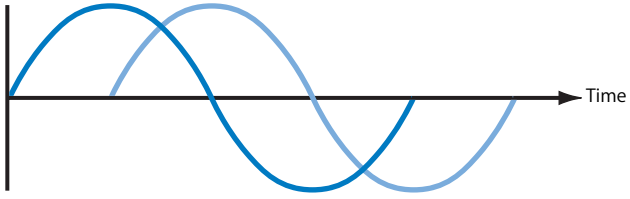
Percussive envelope



Sustained envelope

Phase Relationships

When two instruments or voices are playing the same pitch, the sound waves may have the exact same frequency and amplitude, but the peaks and troughs of the wave reach our ears, or a microphone recording the sound, at slightly different times. This is referred to as a difference in the *phase* of the sound waves. When two sound waves are completely in phase, the volume of the sound is doubled. When two sound waves are completely out of phase, they cancel each other out and we hear silence. Certain effects, such as phase shifters, make use of these properties of phase relationships to alter the sound of an audio signal.

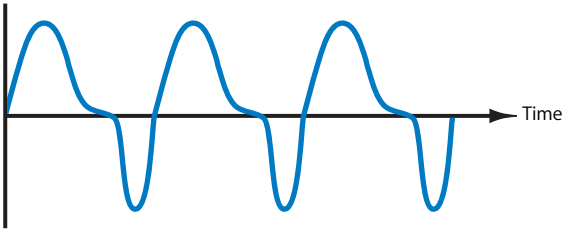


Recording Sound

When a sound is recorded, the sound waves traveling through the air are converted to an electrical signal, using a device called a *transducer*. Sound can be recorded using either *analog* or *digital* recording technology.

Analog Recording

When a sound is recorded using analog technology, the sound waves are recorded as a continuous electrical signal. Typically, the vibrations in the air contact the diaphragm of a microphone, setting the diaphragm in motion. A transducer in the microphone converts the diaphragm's motion into an electric signal. The compressed parts of the sound wave are recorded as positive electrical voltages, and the rarefied parts of the wave are recorded as negative voltages. The voltage of the recorded signal is an *analog* of the wave's frequencies and their relative amplitudes at any point in time.

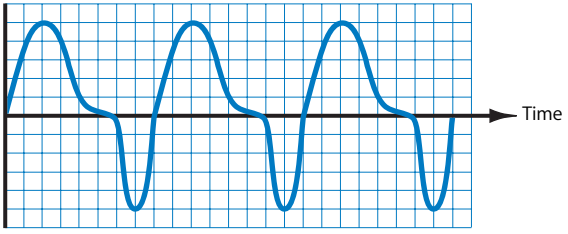


Analog recording technology was originally developed using mechanical means to etch the sound signal directly onto wax cylinders or lacquer disks. Its simplicity, and the rapid development of electronics during the twentieth century, led to its widespread use for recording music and for adding sound to motion pictures.

However, analog audio recording is subject to several problems in achieving high-fidelity reproduction of sound. These include noise, distortion, and loss of quality each time the audio signal is copied or reproduced.

Digital Recording

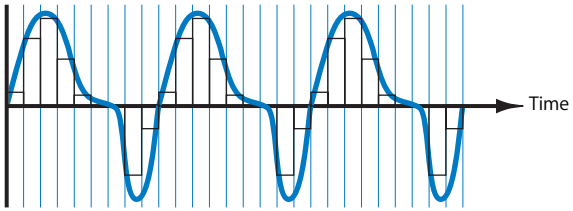
When a sound is digitally recorded, the sound waves are recorded as a series of *samples* onto a hard disk or other digital storage medium. A sample stores the voltages corresponding to the wave's frequencies and their relative amplitudes as a series of binary numbers, or bits. Each sample is like a snapshot of the sound at a particular instant in time.



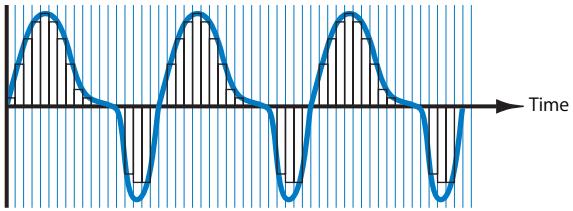
Digital recording technology offers several advantages over analog technology for recording sound, including lower noise, wider frequency response, and less distortion (if the sound is recorded at the proper level). In addition, digital recordings can be reproduced any number of times without any loss of audio quality. These advantages, combined with the popularity of personal computers, have led to the rapid development of digital audio as a leading technology for music production.

Sample Rate and Bit Depth

The audio quality of any digital recording depends on two factors: the sample rate and the bit depth used to record the signal. The *sample rate* is the number of samples recorded per second. The *bit depth* is the number of digital bits each sample contains. Together, these two factors determine the amount of information contained in a digital audio recording. The higher the sample rate and bit depth of a recording, the more accurately the recording reproduces the original sound.



Low sample rate

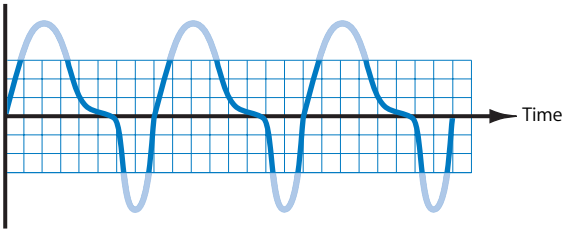


High sample rate

Recording music digitally requires a very high sample rate and bit depth to reproduce the nuances in the music satisfactorily. The Nyquist theorem states that sounds must be recorded at no less than double the rate of the highest frequency being sampled to accurately reproduce the original sound. Audio CDs are recorded at a sample rate of 44.1 kHz and a bit depth of 16 bits (some CDs use a higher 20- or 24-bit depth). Audio for DVDs is often recorded using a slightly higher sample rate of 48 kHz. Soundtrack lets you record and play back digital audio files at sample rates of up to 96 kHz, and at bit depths of up to 24 bits.

Digital Distortion

To record sound with the widest possible dynamic range, the input level must be set high enough to capture the complete audio signal. When the input level of the signal is set too high, however, the signal exceeds the maximum level that can be sampled or reproduced accurately, resulting in *digital distortion*. Digital distortion is defined for most digital audio applications, including Soundtrack, as any time the signal rises above 0 dB. Even a single sample above 0 dB can produce noticeable distortion, which you hear as a sharp crackling sound in the audio output. Digital distortion is nearly always undesirable, and Soundtrack includes audio meters and other controls so that you can identify and remove distortion from your projects.



Basic Music Concepts

You can create professional-sounding music projects in Soundtrack without any background or training in music. In order to understand how the different elements in a piece of music work together, and how you can use them to plan and create projects in Soundtrack, it's helpful to know some basic concepts about music.

Rhythm and Tempo

Rhythm is the most essential of all elements of music. People respond to rhythm unconsciously by tapping their feet or moving their bodies in time to the rhythm. When the rhythm in a piece of music changes, most people feel a difference in the character or mood of the music right away.

Rhythm defines the sense of time in music by creating a recurring pulse. The feeling of rhythmic pulse in music can be subtle (for example, in classical music and some electronic music), or it can dominate all other elements of the music (as in tribal drumming or in dance music).

There are usually several layers of rhythm occurring simultaneously in a piece of music. The strongest rhythmic layer occurs in regular units called *measures*. Falling within each measure are a number of softer pulses called *beats*. The beat that coincides with the beginning of the measure is called the *downbeat*. There can also be more subtle pulses between beats. In the Soundtrack interface, the Beat ruler and Beat display show the division of musical time into measures, beats, and beat divisions.

Musicians use the concept of *time signature* to express the relationship between measures and beats. The first, or upper, number of the time signature indicates the number of beats in each measure, and the second, or lower, number indicates the basic beat value.

The rate at which beats occur in a piece of music is called its *tempo*. Tempo is measured in beats per minute (bpm). Music with an active or upbeat feeling tends to use a faster tempo, while music with a more relaxed or inward feeling tends to use a slower tempo. You can control the tempo of a Soundtrack project, and change the tempo during the course of a project.

Melody

Melody is often the most recognizable or memorable part of a piece of music. It's the part of the music you walk away singing, whistling, or humming, and the part you usually think of when trying to identify the music or tell someone about it.

A melody is an arrangement of musical notes in a specific rhythmic pattern. Melodies establish the character of a piece of music, and immediately evoke a feeling or mood.

In Soundtrack projects, you work with prerecorded loops, some of which contain melodies or melodic phrases. If you sing or play an instrument, you can also record original melodies in Soundtrack. Whether you use existing loops or your own recordings, the most important thing to consider is whether a melody you want to use is appropriate for the style and feeling of a particular project.

Harmony and Key

Harmony occurs when several musical notes are played simultaneously, typically in groups of three or more notes called *chords*. The harmony of a piece of music is often played by rhythm or accompanying instruments, and works with the rhythm and melody to help establish the feeling of the music. As a piece of music progresses, the harmony changes, often at the beginning of a measure or on a strong beat, creating chord progressions that help give the music a sense of forward motion.

Most music makes use of groups of related notes called musical *scales* as the basis for both melody and harmony. The most common scales are the *major scale* and the *minor scale*. A scale centered around a particular musical pitch is called the *key* of a piece, and the central note is called the *root note* or *tonic* of that key. You can set the key of a Soundtrack project, and add key changes over the course of a project.

Some loops and one-shots you'll use in your projects contain recordings with harmonies and chords. Soundtrack automatically matches the key of each audio file you add to a project to the project's key. You can also transpose individual loops to create chord progressions and achieve other harmonic effects.

Instrumentation

The instruments used in any piece of music help define the style and the character of the music. Because each instrument adds its own particular range of musical expression to the piece, the choice of instrumentation is a crucial one in creating your projects. If you're working in a particular style, you should always consider whether an instrument fits the sound of that style. If you're going for something original, you can try combining instruments in a unique or unusual way.

The art of arranging involves choosing the right instrumentation, and using changes in the instrumentation over the course of the piece to create musical interest and drama. The arrangement becomes an integral part of the character and expression of the music.

Musical Patterns and Form

Most styles of music engage their audience by building up repeating patterns, then breaking or changing them after a number of repetitions. Larger musical compositions are created out of a series of related patterns.

Musical patterns typically occur in groups of two or four, and changes from one pattern to another typically occur at multiples of four. The form of a popular song provides a simple example: Many pop songs consist of a short introduction followed by two main sections, the verse and the chorus. The verse and chorus alternate several times, with the melody either sung or played by the lead instruments.

The introduction typically lasts 8 or 16 measures; each verse lasts 16 or 32 measures, and the chorus lasts for another 16 or 32 measures. In both the verse and chorus, the harmony may change at the beginning of every measure, or every two or four measures. Often the last chorus is repeated several times for a coda or "outro."

Most styles of contemporary music are based to some degree on song form. You can easily create projects based on this form, using loops with drum beats and rhythmic patterns to define each section of the form. Each repetition of the verse and chorus sections can be set off using loops with vocals, or with varying lead or solo parts. You can scale the length of the piece to fill a specific amount of time, such as the length of a movie you want to score, by either adjusting the tempo or changing the number of times the final section repeats.

Another typical feature of song-based music is that there is often a signal at the end of each pattern that tells the audience that the pattern is about to change. Often this occurs in the drums or rhythm section parts. For example, the drums may repeat the same pattern for seven measures, but introduce slight changes in the eighth measure that energize the music and signal that a new pattern is about to start. Musicians call these signals *fills,* and loop libraries often contain several fills meant to be used with a looped drum pattern.

Setting Up Your System

2

The way you set up your system depends on the audio equipment you plan to use.

You can use your computer's speaker or headphone jack to monitor the audio output from Soundtrack. For better results, you may want to connect external monitors or speakers to your system, so that you can monitor the audio output at a higher level of quality. You may want to connect other external audio equipment such as an audio interface or a mixer, particularly if you plan to record your own audio in Soundtrack.

- For information on system and hardware requirements, see the Read Before You Install document on the installation DVD.
- For information on installing the software, see the *Installing Your Software* booklet.

System Considerations

To achieve the most effective results, you should consider the following issues when setting up your system.

Processor Speed and RAM

Digital audio files require intensive processing by your computer. If you plan to work on longer or more complex projects, or use multiple effects plug-ins in your projects, a computer with a faster processor can facilitate your productivity.

Soundtrack is optimized for use with computers that have a multiprocessor architecture. Working with Soundtrack projects on a multiprocessor-equipped computer can make your workflow more efficient, especially when creating longer or more complex projects.

If you plan to work on large projects, it's useful to have extra random-access memory, or RAM, installed in your computer. Additional RAM allows you to play back more files simultaneously, use a greater number of effects plug-ins, and keep several multimedia applications open at the same time.

Hard Disk Space

It's also a good idea to have a large hard disk with plenty of available space to store the media (audio and video) files you use with Soundtrack. As you work with the application, you'll likely want to acquire a large collection of sounds to use in your Soundtrack projects. You can use audio files stored on a CD-ROM disc or other external media, but playback performance may not be as good as when the audio files are installed on a local hard disk, especially when using a large number of files.

If you store media files on an external hard disk, make sure the disk has a fast enough seek time and a high enough sustained data transfer rate for use with multimedia files. Consult the manufacturer's specifications.

Dedicated Hard Disk

If you plan to record your own audio in Soundtrack, remember that every minute of stereo digital audio (recorded using a 44.1 kHz sample rate and 16-bit depth) requires roughly 10 MB of hard disk space. If you plan to record large amounts of audio, you may want to record to a dedicated hard disk.

Setting the Audio Input and Output

By default, Soundtrack uses the input and output devices set in your computer's System Preferences for audio input and output. You can set the default input and output (for monitoring) devices for Soundtrack in the Recording pane of the Soundtrack Preferences window, and change them for individual recording sessions in the Recording tab. For information on changing the default input and output devices Soundtrack uses, see "Setting Soundtrack Preferences" on page 73.

Adding Audio Units Plug-Ins to Your Computer

Soundtrack includes an extensive set of professional-quality effects plug-ins. Soundtrack uses effects in the Audio Units plug-in format, the native plug-in format of Mac OS X.

Audio Units plug-ins are also available from third-party manufacturers. When adding third-party effects to your computer, be sure to read the documentation, including any Read Me and installation files, that came with the plug-in. Supported Audio Units effects plug-ins appear in the Effects window under the manufacturer's name.

Soundtrack does not support VST, ASIO, MAS, or RTAS effects plug-ins.

Connecting Audio Equipment

You can use a variety of audio equipment with Soundtrack for both recording and playback. For information on connecting a specific piece of equipment to your computer, read the documentation that came with the equipment.

When using external audio devices, it's a good idea to connect them before opening Soundtrack.

Soundtrack does not support video input from devices such as camcorders or videocassette decks.

Audio Interfaces

You can connect an audio interface to your computer, and then connect microphones and musical instruments to the audio interface for recording. You can also connect output devices, such as monitors or speakers, a mixer, or an amplifier to the audio interface.

When choosing an audio interface, check the manufacturer's specifications to make sure the interface is compatible with Mac OS X v10.4 (Tiger). Some audio interfaces require driver software, while others are supported without the need for a driver. If the device requires a driver, make sure an up-to-date driver is included with the device, or is available from the manufacturer.

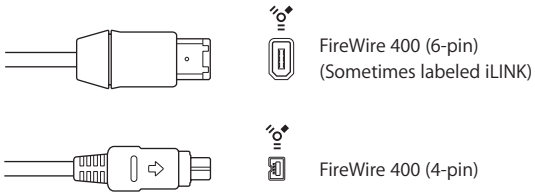
All digital audio interfaces can be susceptible to *latency,* a noticeable delay between the time the audio signal is produced and the time you hear it. When connecting an audio interface, you should connect the interface directly to the computer, rather than connecting it through a hub or daisy-chaining it through another device. Connecting an audio interface through a hub or an intermediary device can cause an unacceptable amount of latency, particularly with slower protocols such as USB.

Soundtrack supports input from digital audio interfaces up to a maximum sample rate of 96 kHz and a maximum bit depth of 24 bits. If you connect an interface that uses sample rates or bit depths outside the range supported by Soundtrack, an alert message appears, telling you that data from the audio interface is not compatible with the application.

FireWire (IEEE 1394)

FireWire is a professional and consumer standard for both audio and video equipment. The combination of fast data-transfer rates, high storage capacities, and plug-and-play connection makes FireWire an attractive choice for working with digital audio files. FireWire is included on all current Macintosh computers, and a number of FireWire audio interfaces are available.

There are two kinds of FireWire connectors: a 4-pin connector (typically found on video equipment) and a 6-pin connector (used for computer and audio equipment).



USB (Universal Serial Bus)

USB is a consumer standard used on computer peripherals and other devices. USB offers a lower data-transfer rate than FireWire, but supports plug-and-play operation and the ability to connect several devices in sequence (daisy-chaining). Some USB devices draw their power over the USB cable, while others require a separate power connection. USB is included on all current Macintosh computers.

There are two kinds of USB connectors: an A connector, typically used to connect a device to a USB hub, and a B connector, typically used to connect devices together, and also to connect a device to a computer. USB audio interfaces should always be directly connected to your computer, not connected via a hub or to the computer's display, keyboard, or another peripheral.

PCI (Peripheral Connect Interface)

PCI interfaces, unlike FireWire and USB interfaces, require that you install a dedicated sound card in your computer. PCI provides high bandwidth and fast data-transfer rates, allowing you to record and play back large numbers of files at the highest possible sample rates and bit depths.

PCMCIA

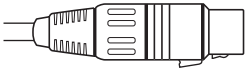
PCMCIA is a consumer standard for connecting devices to a laptop computer. PCMCIA provides a lower data-transfer rate than FireWire or USB, but provides a compact, affordable solution for connecting an audio interface to your computer, while keeping your USB and FireWire ports available for other devices. Most current Macintosh laptop computers support PCMCIA connections via a built-in card slot.

Audio Cabling

There are several types of audio cables and connectors used on professional and consumer audio equipment, at a range of prices and levels of quality. When connecting microphones and musical instruments to an audio interface or a mixer, make sure the interface has the proper input jacks for the type of connectors and cables you plan to use.

XLR

XLR cables and connectors are used on professional-quality microphones, monitors, and other musical equipment. They provide a high-quality, balanced signal at +4 dB level.

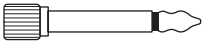


XLR connector (balanced)

1/4-Inch Audio

1/4-inch connectors (sometimes called "phone plugs") are used on a wide variety of professional and consumer musical equipment, including musical instruments and amplifiers, speakers, and external effects devices. They can be either balanced (+4 dB) or unbalanced (–10 dB). Some devices require Tip-Ring-Sleeve (TRS) connectors to transfer the audio signal.

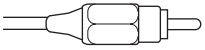
1/4-inch Tip-Ring Sleeve (TRS) connector



1/4-inch Tip-Ring (TR) connector

RCA

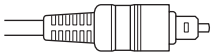
RCA connectors are used on consumer audio equipment such as home stereo systems and videocassette recorders.



RCA connector (unbalanced)

Optical Digital (AES-EBU and S/PDIF)

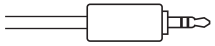
AES-EBU and S/PDIF are both used to provide an optical digital connection to professional and consumer audio equipment, including audio interfaces, DAT (digital audio tape) machines, and hardware samplers. Both carry a stereo digital signal. AES-EBU is balanced, and has an operating level of 5 volts, while S/PDIF is unbalanced and has an operating level of roughly 1/2 volt. There are adapter cables available to convert between the two protocols. S/PDIF carries additional information with the audio signal, including SCMS copy-protection information.



S/PIDF optical digital connector

1/8-Inch Miniplug

Miniplug connectors are used for audio input and output to computers and on some consumer electronic devices, particularly portable ones.



Stereo miniplug connector (unbalanced)

Audio Output

Being able to monitor the audio output of your projects at a high level of quality is crucial to achieving professional results. In general, you should use the best output equipment your budget allows.

Speakers and Monitors

You can play back audio through your computer's speakers or headphone jack, but the audio output may not be high enough for you to evaluate your music at a professional level of quality. Connecting external speakers or monitors to your system allows you to hear the audio output with greater fidelity and a wider dynamic range. In general, you should use the highest-quality speakers or monitors you can afford in order to hear your projects at the highest level of audio quality.

For detailed information about connecting external speakers to your audio interface, see the documentation that came with the speakers.

Amplifiers

If you are recording audio from microphones, and are not running the microphone's signal through a mixer with a microphone pre-amplifier, you need to connect an amplifier to boost the microphone's signal before sending it to the computer. If you are connecting monitors or speakers that are not self-powered, you also need to connect them through an amplifier.

Mixers

Connecting a mixer to your system allows you to record audio from multiple microphones or instruments simultaneously, to play back the output from your computer through connected monitors or speakers, and to control the volume levels of both the audio input and output. Professional-quality mixers have a number of additional features, including equalization (EQ) controls, auxiliary sends and returns for adding external effects, and separate monitor and mix level controls. Mixers may also include inboard pre-amplification for microphones, making the use of a separate amplifier unnecessary.

Example Hardware Setups

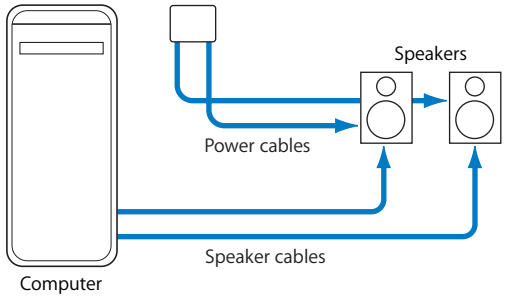
The following sections provide several examples of different hardware setups.

Setting Up a System Using Powered Speakers

With this setup, you can monitor the audio output through a set of connected powered speakers.

This setup uses the following equipment:

- Your computer and display
- A set of powered speakers, including speaker wire and a power adaptor

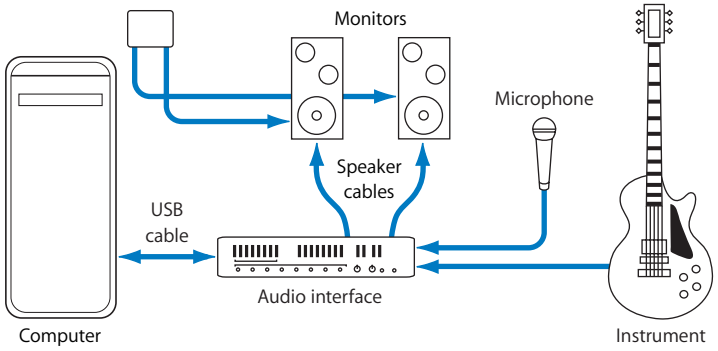


Setting Up a System Using a USB Audio Interface

With this setup, you can record audio input from microphones and musical instruments, and monitor audio output, through a USB audio interface.

This setup uses the following equipment:

- Your computer and display
- USB audio interface (from 2 to 8 channels) with USB cable to connect to your computer
- Microphone
- Musical instruments (guitar, bass, and keyboard)
- Cables to connect microphones and instruments to the audio interface
- Set of monitors or speakers

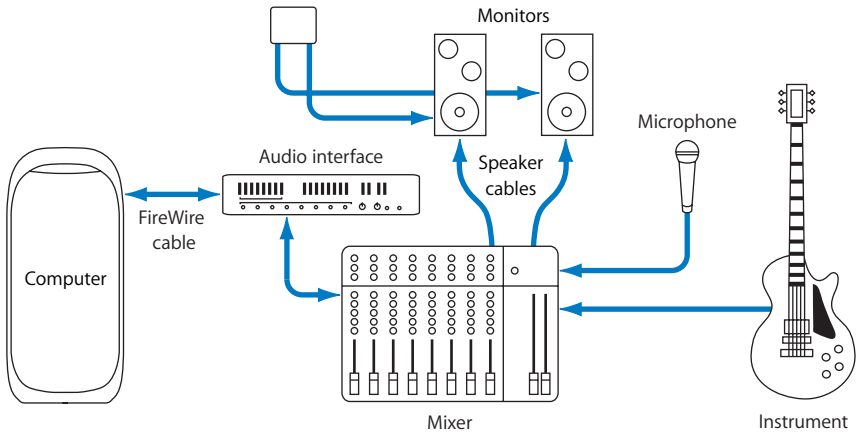


Setting Up a System Using a FireWire Audio Interface

With this setup, you can record audio input from several sources simultaneously, and monitor audio output channels independently, through a mixer connected to a FireWire audio interface.

This setup uses the following equipment:

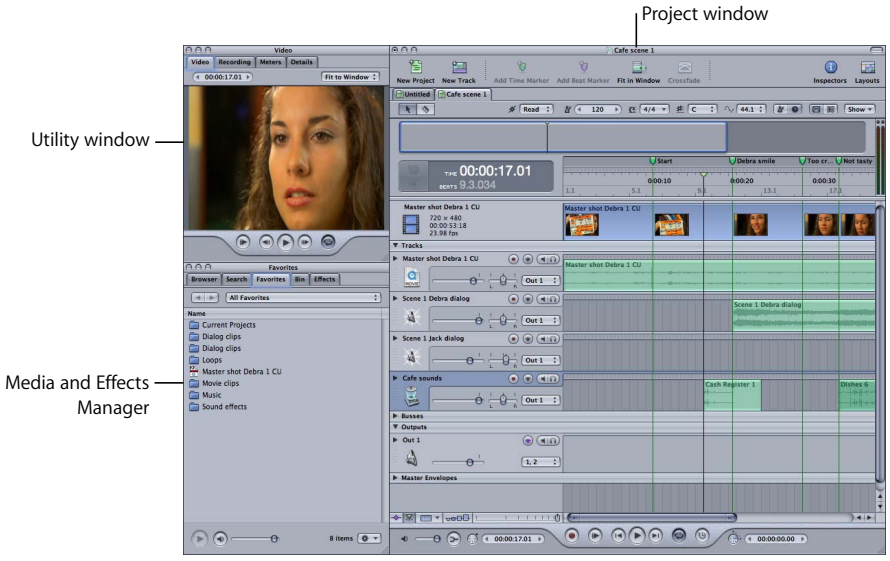
- Your computer and display
- FireWire audio interface with FireWire cable to connect to your computer
- Mixer (8 channels) with built-in pre-amplifier
- Microphones
- Musical instruments (guitars, bass, keyboards, and outboard effects units)
- Set of powered monitors or speakers
- Cables to connect microphones and instruments to the mixer and audio interface
- Speaker cables



The Soundtrack Interface

3

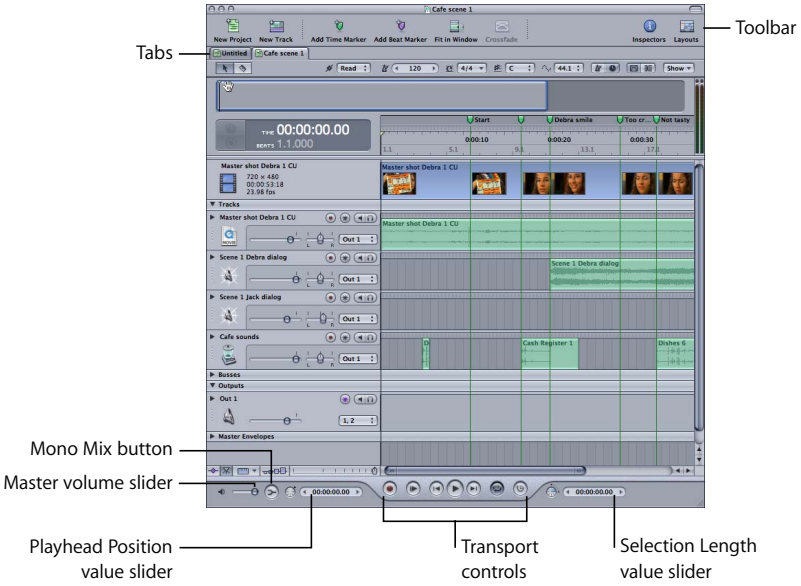
In Soundtrack, you work in three main windows: the Project window, the Media and Effects Manager, and the Utility window.



- The Project window includes the Timeline, where you arrange audio clips.
- The Media and Effects Manager is where you locate and preview audio and video files to add to your project, and also where you add and adjust realtime effects.
- The Utility window has tabs where you can add and view a video in a project, see the master level meters, get details on clips and other items, and set up recording.

Project Window

The Project window is the "canvas" where you work on your projects. The Timeline is where you arrange and edit audio clips.



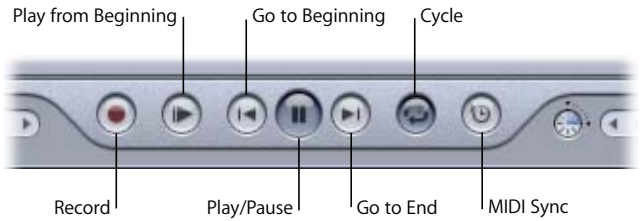
- *Toolbar:* Includes tools for common functions. You can customize which tools appear in the Toolbar.
- *Tabs:* You can switch between any projects open in the Timeline.
- *Transport controls:* Control playback and the position of the playhead, and turn recording on or off. (For more information, see "Transport Controls" on page 33.)
- *Master volume slider:* Adjusts the overall volume when you play the project. The volume level defaults to 0 dB when you create a project. Adjusting the master volume slider does not affect export volume.
- *Mono Mix button:* Click to listen to a temporary mono mix of the project.
- *Playhead Position value slider:* Displays the current playhead position. You can move the playhead by clicking the arrows, dragging, or typing a value.
- *Selection Length value slider:* Displays the length of the current Timeslice in the Timeline. You can change the Timeslice or selection length by clicking the arrows, dragging, or typing a value.

Toolbar

The Toolbar is located at the top of the Project window. When you first open Soundtrack, the Toolbar includes buttons for creating a new project, managing layouts, displaying the Utility window, adding markers, and other common functions. You can customize the Toolbar, adding buttons for functions you want to access frequently. For information about customizing the Toolbar, see "Customizing the Toolbar" on page 50.

Transport Controls

You use the transport controls to control playback, set the position of the playhead, start recording, and activate the playback region.

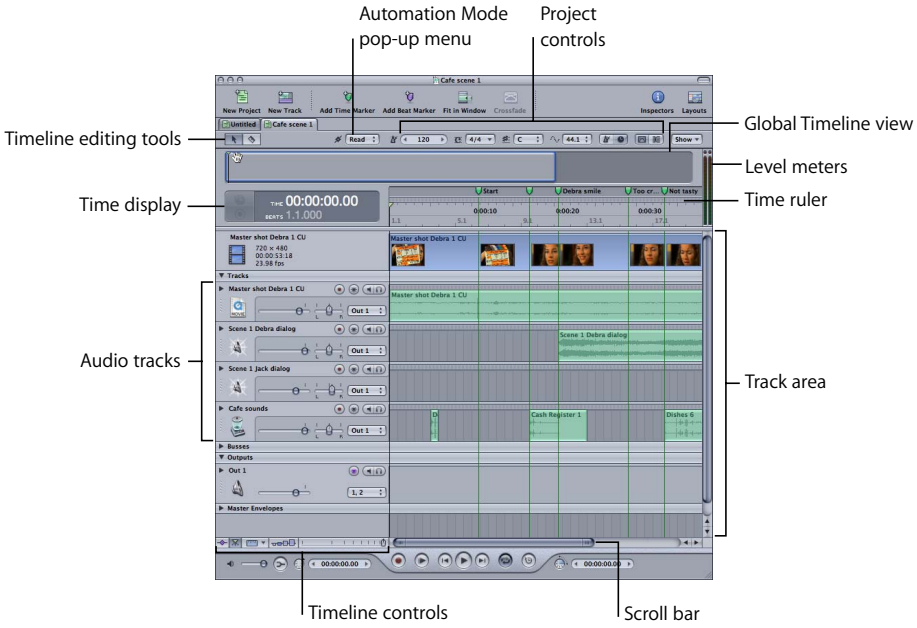


- *Record button:* Starts and stops the recording process.
- *Play from Beginning button:* Starts playback from the beginning of the project.
- *Go to Beginning button:* Moves the playhead to the beginning of the project, or to the beginning of the playback region if it is active.
- *Play/Pause button:* Starts playback at the current playhead position. If the project is playing, stops playback.
- *Go to End button:* Moves the playhead to the end of the project, or to the end of the playback region if it is active.
- *Cycle button:* Activates the playback region, if one is set in the Time ruler.
- *MIDI Sync button:* Synchronizes playback with incoming MIDI Clock and MIDI Timecode (MTC) signals.

For information on using the transport controls, see "Controlling Playback with the Transport Controls" on page 56.

Timeline

The Timeline gives you a visual representation of a project, showing the position of clips, the playhead, and other items in time. The Timeline is organized into three groups of horizontal rows called tracks, busses, and outputs. You can add and arrange audio clips in tracks, use busses to create submixes, and send audio to physical output channels using outputs. You can control the sound of each track, bus, and output using the controls in its header.

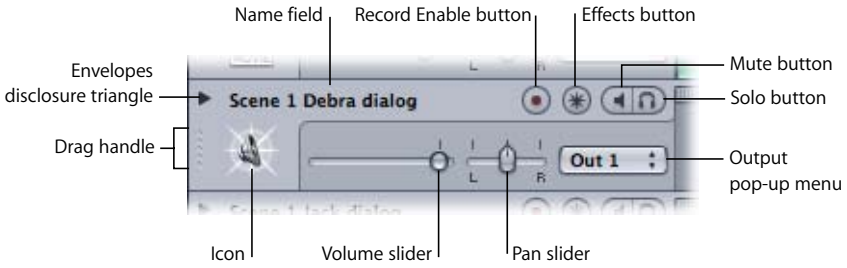


- *Timeline editing tools:* Select items using the Selection (arrow) tool, or split audio clips using the Split (razor) tool.
- *Automation Mode pop-up menu:* Choose the mode for recording automation using the onscreen controls.
- *Project controls:* Set the project's time signature, tempo, key, sample rate, time format, and other properties using these controls.
- *Show pop-up menu:* Choose whether the video track, audio tracks, busses, outputs, and master envelopes are visible in the Timeline.
- *Global Timeline view:* Shows a miniature view of the entire Timeline and the playhead position, and lets you move quickly to different parts of a project.

- *Time display:* Shows the current playhead position in both Time-based and Beats-based formats. You can set the playhead by typing a new playhead position in the time display.
- *Level meters:* As the project plays, the level meters show the volume level of the first output (Output 1).
- *Time ruler:* You can precisely position clips, the playhead, and other items to a specific point in time (minutes, seconds, frames) or to a musical beat using the Time ruler.
- *Track area:* Includes horizontal rows for tracks, busses, and outputs. Also includes the playhead, envelopes, and markers.
- *Headers:* Each track, bus, and output has a header with an icon, name, volume slider, and other controls. (For more information, see "Headers" on page 35.)
- *Timeline controls:* Includes controls to show the master envelopes, turn snap on or off, set the track height, and zoom in or out. (For more information, see "Timeline Controls" on page 36.)
- *Scroll bar:* Moves the Timeline horizontally so you can see different parts of the project.

Headers

Each track, bus, and output in the Timeline has a header that includes the track name, track icon, and a set of track controls.



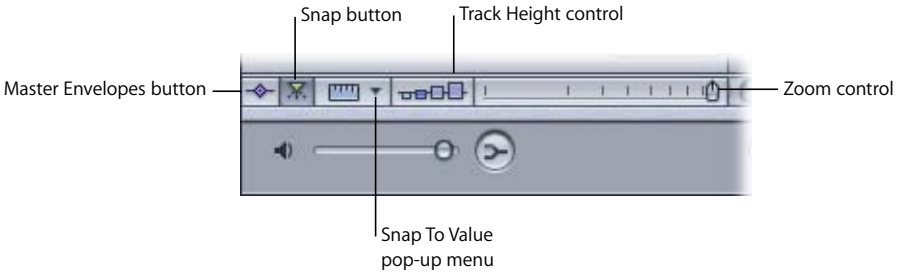
- *Drag handle:* Click to select the track, bus, or output and drag to reorder it in the Timeline.
- *Icon:* You can choose an icon for the track, bus, or output, making it easy to quickly distinguish them in a large project.
- *Name field:* You can type a new name for the track, bus, or output in the name field.
- *Record Enable button:* Enables (or disables) the track for recording when you click the Record button. Only tracks have Record Enable buttons, not busses or outputs.
- *Mute button:* Mutes (or unmutes) the track, bus, or output.
- *Solo button:* Solos (or unsolos) the track, bus, or output. Soundtrack supports both multiple solo and exclusive solo.
- *Effects button:* Displays the Effects tab of the Media and Effects Manager with the track, bus, or output effects settings.

- *Envelopes disclosure triangle:* Shows the track, bus, or output envelopes in the area directly below the track.
- *Volume slider:* Sets the track, bus, or output relative volume in the overall mix.
- *Output pop-up menu:* Choose an output for the track or bus, or choose the physical output channels for the output from the menu.
- *Pan slider:* Sets the pan position of the track or bus. Appears in track and bus headers only, not in output headers.

For detailed information about using the track controls, see "Using the Track Controls" on page 96.

Timeline Controls

The lower-left corner of the Timeline contains controls for various aspects of Timeline display and operation.



- *Master Envelopes button:* Shows or hides the master envelopes.
- *Snap button:* Turns snap on or off.
- *Snap To Value pop-up menu:* Sets the value to which items in the Timeline snap.
- *Track Height control:* Sets the height of tracks, busses, and outputs to one of four settings, from Reduced to Large.
- *Zoom control:* Click the control or drag the slider to change the zoom level. You can zoom in to edit clips precisely, or zoom out to display more of the Timeline.

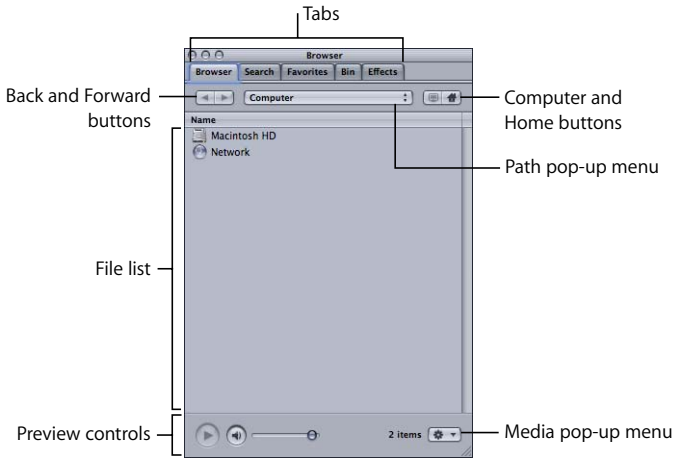
For information about using master envelopes, see "Master Envelopes" on page 144. For information about snap, see "Using Snap" on page 70. For information about using the Track Height control and zoom control, see "Moving Around in the Timeline" on page 89.

Media and Effects Manager

The Media and Effects Manager is where you locate and preview media (audio and video) to add to your project. It has five tabs: The Browser, Favorites, and Search tabs give you three different ways to find media files; the Bin gives you quick access to media files for the current project; and the Effects tab is where you add and adjust effects.

Browser Tab

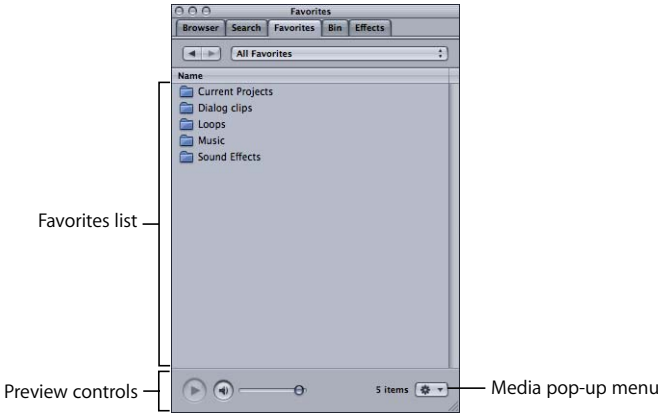
The Browser tab displays the disks connected to your computer in a view similar to the Finder's list view. You can also preview files in the Browser tab, and drag them to the Timeline.



- *Back and Forward buttons:* Move through previously viewed levels of the folder hierarchy.
- *Computer button:* Displays your computer's hard disk and other storage media connected to your computer.
- *Home button:* Displays the contents of your home directory.
- *Path pop-up menu:* Displays the levels of the file path to the current location, letting you move back to a previous level.
- *File list:* Displays the files and folders at the current location.
- *Preview controls:* Include Play and Mute buttons and a volume slider. For information about using the Preview controls, see "Using the Preview Controls" on page 67.
- *Media pop-up menu:* Choose menu items to add a Favorite, add a file to the Bin, and perform other functions.

Favorites Tab

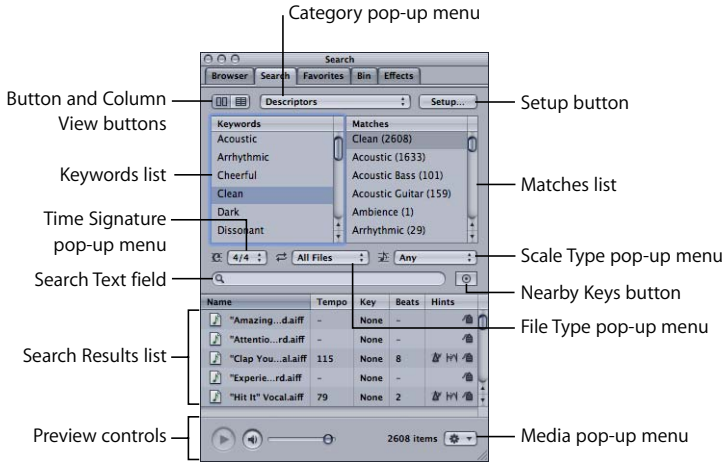
You can store frequently used items in Favorites so that you can easily access them directly. You can also preview files in Favorites, and drag them to the Timeline.



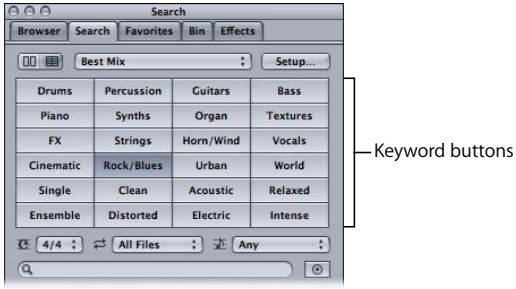
- *Back and Forward buttons:* Move through previously viewed levels of the folder hierarchy.
- *Path pop-up menu:* Displays the levels of the file path to the current location, letting you move back to a previous level.
- *Favorites list:* Displays the files and folders at the current location.
- *Preview controls:* Include Play and Mute buttons and a volume slider. For information about using the Preview controls, see "Using the Preview Controls" on page 67.
- *Media pop-up menu:* Choose menu items to remove a Favorite, add a file to the Bin, and perform other functions.

Search Tab

The Search tab lets you locate audio and video files using a variety of criteria. You can perform text searches and search for Apple Loops and other tagged file formats using keywords for instrument, genre, mood descriptors, and other categories. Matching files are displayed in the Search Results list. Once you locate the files you want to use, you can preview them in the Search Results list or drag them to the Timeline.



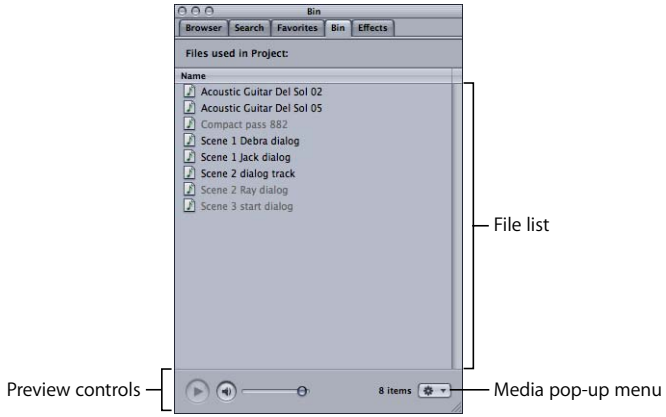
The Search tab has two views, Column view and Button view. Column view features a Keywords list containing keywords, and a Matches list with subcategories you can use to refine your searches. Button view displays a matrix of keyword buttons you can click to see matching files.



- *Button and Column View buttons:* Change the view to either Button or Column view.
- *Category pop-up menu:* Restricts the available keywords to a particular category.
- *Setup button:* Displays the Search Setup dialog, from which you add items to the Search database.
- *Time Signature pop-up menu:* Restricts search results to files with the selected time signature.
- *File Type pop-up menu:* Choose whether to display all files, or only looping or non-looping files.
- *Scale Type pop-up menu:* Restricts search results to audio files using the selected scale.
- *Keyword buttons (Button view only):* Displays files matching the keyword in the Results list.
- *Keywords list (Column view only):* Displays files matching the keyword in the Results list and displays subcategories in the Matches list.
- *Matches list (Column view only):* Displays subcategories of the selected keywords.
- *Search Text field:* Type text in the field to display matching files whose filename or path contains the search text.
- *Nearby Keys button:* Restricts search results to keys within two semitones above or below the project key.
- *Search Results list:* Displays the files matching the selected search criteria, in alphabetical order. Includes columns displaying the tempo, key, and number of beats of each file. You can click files to preview them.
- *Preview controls:* Include Play and Mute buttons and a volume slider. For information on using the Preview controls, see "Using the Preview Controls" on page 67.
- *Media pop-up menu:* Choose menu items to add a Favorite, add a file to the Bin, and perform other functions.

Bin Tab

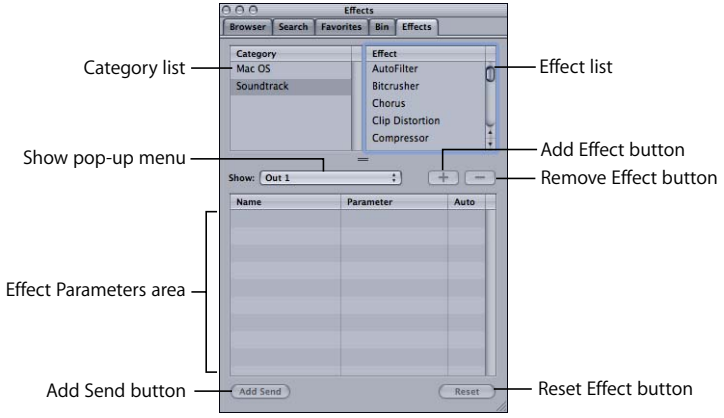
The Bin tab lists the media files added to the project. You can drag files from the Bin tab to the Timeline. You can also add files to the Bin for easy access in a project. Files not currently added to the project appear dimmed, and offline files appear in red text.



- *File list:* Displays the media files in the current project.
- *Preview controls:* Include Play and Mute buttons and a volume slider. For information about using the Preview controls, see "Using the Preview Controls" on page 67.
- *Media pop-up menu:* Choose menu items to add a Favorite, add a file to the Bin, and perform other functions.

Effects Tab

You add effects and sends to your project and adjust effect parameters in the Effects tab. When you click the Effects button on a track, bus, or output, the Effects tab appears showing the item's current effects settings and sends.



- *Category list:* Lists the categories of available effects, which are categorized by manufacturer. Click a category to see the effects for that category in the Effect list.
- *Effect list:* Lists the effects in the selected category. Double-click an effect to add it to the track, bus, or output.
- *Show pop-up menu:* Choose an item (a track, bus, or output) from the Show pop-up menu to display its effects settings.
- *Add Effect (+) button:* Adds the selected effect to the current effects chain.
- *Remove Effect (–) button:* Removes the selected effect from the current effects chain.
- *Effect Parameters area:* Displays the parameters for effects in the current effects chain. Click an effect's disclosure triangle to see its parameters. You can adjust effect parameters using the controls in the Effect Parameters area.
- *Add Send button:* Adds a send to the end of the current effects chain for the track. You can add sends only to tracks, not to busses or outputs.
- *Reset Effect button:* Resets the selected parameter or group of parameters to its default value (or values).

Utility Window

The Utility window features tabs for viewing a video in a project, observing project levels, viewing details, and setting up recording.

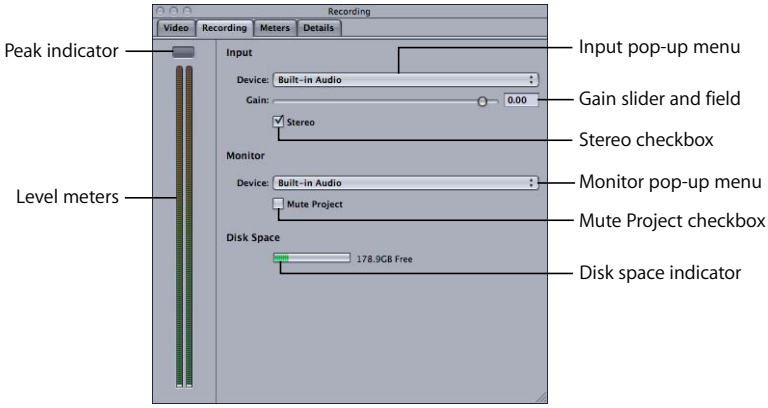
Video Tab

The Video tab is where you add a video to a project, view the video, and control video playback.

- *Video Playback value slider:* Move the video to a specific frame by dragging, clicking the left or right arrow, or double-clicking and typing a value in the value slider.
- *Video Scale pop-up menu:* Choose the scale of the video in the Video tab from the pop-up menu.
- *Video viewing area:* Add a video by dragging it into the viewing area, and watch it play in the viewing area.
- *Video transport controls:* Control playback of the video with the project using the Play from Beginning, Previous Frame, Play/Pause, Next Frame, and Cycle buttons.

Recording Tab

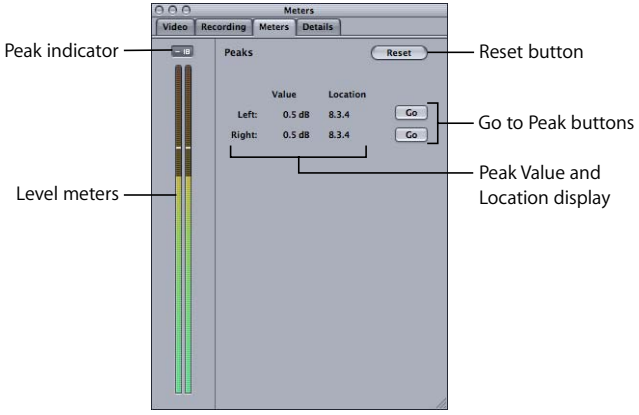
The Recording tab is where you edit a track's recording settings. When you click a track's Record Enable button, the Recording tab appears, displaying the track's current recording settings.



- *Peak indicator:* Shows the highest level reached by the recording input signal. If the level rises above 0 dB, the peak indicator becomes red to indicate clipping.
- *Level meters:* Show the input volume for the selected track during recording.
- *Input pop-up menu:* Choose the input device and input channel (or channels) for recording.
- *Gain slider and field:* Drag the slider or type a number in the field to set the input gain for recording.
- *Stereo checkbox:* Select to record to a stereo file, or deselect to record to a mono file.
- *Monitor pop-up menu:* Choose the output device and output channel (or channels) for monitoring during recording.
- *Mute Project checkbox:* Select to mute the project during recording, so you hear only the sound being recorded.
- *Disk space indicator:* Shows the available disk space on the recording sessions location set in Recording Preferences.

Meters Tab

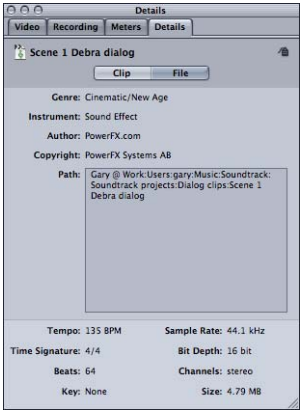
The Meters tab displays stereo level meters that you can use to observe the volume of the first output in a project.



- *Peak indicator:* Shows the highest level reached as the project plays. If the level rises above 0 dB, the peak indicator becomes red to indicate clipping.
- *Level meters:* Show the output volume of the overall project as the project plays.
- *Peak Value and Location display:* For each channel, displays the highest (peak) value played, and its location.
- *Go to Peak buttons:* Move the playhead to the channel's peak.
- *Reset button:* Resets the Peak Value and Location display and the peak indicator to their default values.

Details Tab

The Details tab shows information about the currently selected media file, clip, marker, or envelope point, and gives you a way to edit clip, marker, and envelope point details.



File Details

Clip Details

Audio File Details

When you select an audio file, the Details tab displays information about the file, including the file icon, hints, tags for Apple Loops and other tagged audio files, sample rate, bit depth, file size, and whether the file is a looping or non-looping file.

Video File Details

When you select a video file, the Details tab displays information about the file, including the dimensions of the video, file size, length in seconds, frame rate, and other information. You can preview the video file in the Details window by clicking the Play button in the Media and Effects Manager preview controls.

Clip Details

- *Clip display:* Displays the waveform of the selected clip.
- *Playback buttons:* Set the clip playback mode to looping or non-looping.
- *Measure in pop-up menu:* Sets the units shown in the Position, Duration, and Offset value sliders.
- *Position value slider:* Set the position (start point) of the selected clip.
- *Duration value slider:* Set the duration (length) of the selected clip.
- *Offset value slider:* Set the offset of the selected clip.
- *Transpose pop-up menu:* Choose the number of semitones to transpose a looping clip from the pop-up menu.
- *Clip Speed pop-up menu:* Choose the clip playback speed for a looping clip from the pop-up menu.

Marker Details

- *Type buttons:* Select whether the marker is a Beat marker or a Time marker.
- *Name field:* Type a name for the marker.
- *Position value slider:* Set the time position of the selected marker.
- *Measure in pop-up menu:* Choose the units for setting the marker position.

Envelope Point Details

- *Position value slider:* Set the time position of the selected envelope point.
- *Value value slider:* Set the value of the selected envelope point.
- *Measure in pop-up menu:* Set the units shown in the Position value slider.
- *Copy from Previous Point button:* Set the value of the selected envelope point to the value of the preceding one in the envelope.
- *Copy from Next Point button:* Set the value of the selected envelope point to the value of the next one in the envelope.

Getting Started with Soundtrack

4

This chapter describes what projects you can create in Soundtrack, and how to work with windows, use layouts, play projects, and set Soundtrack preferences.

Overview

In Soundtrack, you create and work with multitrack projects. *Multitrack projects* let you arrange audio clips in tracks in the Timeline and synchronize them to a video clip. You add clips to the Timeline from the Media and Effects Manager or from the Finder, and can also record audio directly into tracks. Each track has controls you can use to adjust volume and pan, mute or solo the track, add effects, and adjust effect parameters. The Timeline also includes busses and outputs with similar controls. You can mix a project in the Timeline, and automate volume, pan, and other controls using envelopes in the Timeline.

You can export a project mix to an audio file, which you can import into Final Cut Express or another application. You can also export selected tracks, busses, and outputs or export a project to a QuickTime movie.

For information about creating, saving, and working with projects, see Chapter 5, "Working with Projects," on page 77.

Note: The audio files used in a project are not stored as part of the project file. The project file only saves references (pointers) to their location on disk. This keeps the size of the project file relatively small, and lets you use an audio file in multiple projects.

Setting Up Your Workspace

There are several ways you can set up the Soundtrack workspace to suit your display size and workflow. You can arrange windows, reorder and detach tabs in the Utility window and the Media and Effects Manager, and add and reorder buttons in the Toolbar. You can create layouts for different tasks and switch between them.

Basic Window Controls

You can move, resize, or minimize a project's windows. Most windows feature tabs, which give you flexibility in arranging the visual elements of a project.

To move a window:

- Drag the window by its title bar to a new location.

To resize a window, do one of the following:

- Drag the Size control in the lower-right corner of the window until the window is the desired size.
- Hold the pointer near the edge of a window until it becomes a Resize Window pointer, then drag the window edge left or right to resize adjacent windows together.

To minimize a window to the Dock:

- Click the minimize button in the window's title bar.

To close a window:

- Click the window's close button (or press Command-W with the window active).

Using Tabs

Soundtrack uses tabbed windows so you can quickly access different project views and controls. You can switch between projects and between different controls in the Media and Effects Manager and the Utility window. Clicking the tab you want makes it active and brings it to the front. You can reorder the tabs in a window to easily access the tabs you use frequently.

To reorder tabs:

- Drag a tab left or right in the window's tab area.

You can also detach a tab from its docked position in the Utility window or the Media and Effects Manager, which creates a separate draggable, resizeable window for the tab. For example, you can drag the Bin tab to a new location so that you can easily move items from the Browser tab to the Bin tab.

To detach a tab from the Utility window or the Media and Effects Manager:

- Drag the tab out of its docked position in the window to create a separate window for the tab.

To reattach a tab:

- Drag the tab back to its original location at the top of its originating window.

Using Project Layouts

Soundtrack lets you save and recall preset window arrangements called *layouts,* so that you can optimize your workspace for different tasks and different display sizes. You can show, hide, and resize windows, then save each window arrangement as a layout.

To save a project layout:

1. Arrange the application windows as you want them to appear.
2. Choose Window > Save Layout.
3. In the Save dialog, type a name for the layout, then click Save.

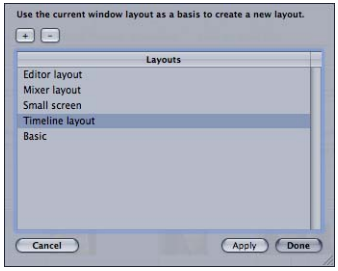
The layout is saved, and appears in the Layouts submenu.

To switch to a saved project layout:

- Choose Window > Layouts, then choose the layout you want to use from the submenu.

To delete a saved layout:

1. Choose Window > Manage Layouts.
2. In the Manage Layouts dialog, select the layout you want to delete.
3. Click the – (minus) button to delete the layout, then click Done.



Customizing the Toolbar

The Toolbar at the top of the Project window contains buttons for frequently used commands. You can customize the Toolbar, adding buttons for the actions you use most often, and can return to the default set later.

The default set of Toolbar buttons includes buttons for creating new projects, opening project windows and tabs, adding markers, and other common commands. You can customize the Toolbar with additional buttons for other commands. You can also hide the Toolbar to maximize available screen space. You customize the Toolbar by dragging items from the Customize dialog to the Toolbar.

To show the Customize dialog, do one of the following:

- Choose View > Customize Toolbar.
- Control-click the Toolbar, then choose Customize Toolbar from the shortcut menu.

The Customize dialog appears, and spaces between buttons in the Toolbar are outlined in gray.

To add a button to the Toolbar:

- Drag a button from the Customize dialog to the Toolbar.

If you drag a button between two existing buttons, the buttons move to make room for the new button.

To move a button in the Toolbar:

- Command-drag the button to a new location on the Toolbar.

You can also rearrange the Toolbar using set-width spaces, flexible spaces, and separators.

To add space or a separator to the Toolbar:

- Drag a space, flexible space, or separator from the Customize dialog to the Toolbar.

To return the Toolbar to the default set of buttons:

- Drag the default button set, located at the bottom of the Customize dialog, to the Toolbar.

You can also change the Toolbar so that it shows only icons or only text.

To show only icons in the Toolbar, do one of the following:

- Control-click the Toolbar, then choose Icon Only from the shortcut menu.
- In the Customize dialog, choose Icon Only from the Show pop-up menu.

To show only text in the Toolbar, do one of the following:

- Control-click the Toolbar, then choose Text Only from the shortcut menu.
- In the Customize dialog, choose Text Only from the Show pop-up menu.

To show both icons and text in the Toolbar, do one of the following:

- Control-click the Toolbar, then choose Icon & Text from the shortcut menu.
- In the Customize dialog, choose Icon & Text from the Show pop-up menu.

To close the Customize dialog:

- When you are finished customizing the Toolbar, click Done.

To hide the Toolbar:

- Choose View > Hide Toolbar. When the Toolbar is hidden, the menu item becomes Show Toolbar.

Playing Projects

You can play projects as you work, so you can hear the audio in the project along with the changes you've made.

To play the project:

- Click the Play button in the transport controls (or press the Space bar). Click the Play button (or press the Space bar) again to stop playback.

  As the project plays, the playhead shows the point in the project currently playing.

  Soundtrack lets you set the playhead and control playback of your projects in several different ways. You can use the transport controls or keyboard commands to start and stop playback and set the playhead to different points in time. You can also set a playback region to repeat playback of a specific part of the project.

Setting the Playhead

The playhead appears as a thin black line running vertically through the Timeline in projects. Where it crosses the Time ruler, the top of the playhead has a triangular handle that makes it easier to see its position onscreen and drag the playhead.

To set the playhead, do one of the following:

- Click anywhere in the Time ruler to set the playhead to that position.
- Drag the triangular handle at the top of the playhead to the position you want to set it. As you drag the playhead, you hear the audio at the current playhead position.

By default, clicking anywhere in the Timeline moves the playhead to that position. You can change the default behavior so that only clicking in the Time ruler moves the playhead. For more information, see "General Preferences" on page 73.

When you set the playhead, it snaps to the nearest Snap To position if snap is turned on. For information on setting the Snap To value, see "Using Snap" on page 70. You can also set the playhead using the transport controls or using the Playhead Position value slider.

Setting the Playhead Using the Time Display

When a project is playing, the Time display constantly updates to show the current position of the playhead in both Time-based and Beats-based formats. You can also set the playhead to a new position by entering the position in the Time display.

The arrangement of the Time-based and Beats-based positions in the Time display changes depending on the time format of the project. The position matching the time format of the project appears in large, white numerals in the upper part of the Time display, and the other position appears below it in smaller, gray numerals. Each position is labeled for quick visual recognition.

For information on setting the project time format, see "Setting Project Properties" on page 78.

To set the playhead using the Time display:

- Select either the Time or Beats position in the Time display, then enter a new position. You can select the entire position or part of the position.

Entering Time-Based Units

When you set the playhead by entering a Time-based position in the Time display, you don't need to enter all of the punctuation. Soundtrack automatically adds the correct punctuation for the format of the Time display.

For example:

- If you enter 01234321, and the Time ruler units are set to seconds, Soundtrack interprets it as 01:23:43:21. This stands for 1 hour, 23 minutes, 43 seconds, and 21/100 of a second.

If you enter a partial number, Soundtrack formats it with the rightmost pair of numbers as fractions of a second (or frames if a timecode format is selected), and with each successive pair of numbers to the left as seconds, minutes, and hours. Numbers omitted from a complete time position are interpreted as zeros. For best results, always enter delimiters to separate each division of time.

For example:

- If you enter 01.23, and the Time ruler units are set to seconds, Soundtrack interprets it as 00:00:01.23. This stands for 1 second and 23/100 of a second.
- If you enter 0.12.34, Soundtrack interprets it as 00:00:12.34. This stands for 12 seconds and 34/100 of a second.

You can select only part of the position in the Time display and enter a new number for that position. For example, you can select only seconds, or minutes and seconds. The other categories keep their present values. You can enter a time position in timecode format, in a way similar to the way you enter timecode in Final Cut Express.

Entering Beats-Based Units

When you set the playhead by entering a Beats-based position in the Time display, you enter periods between numbers to separate measures, beats, and beat divisions. Soundtrack fills out the digits in the beat division category with zeros.

For example:

- If you enter 123, Soundtrack interprets it as 123.1.000. This stands for the 123rd measure, 1st beat, with no added beat divisions.
- If you enter 12.3, Soundtrack interprets it as 12.3.000. This stands for the 12th measure, the 3rd beat, with no added beat divisions.
- If you enter 1.2.3, Soundtrack interprets it as 1.2.300. This stands for the 1st measure, the 2nd beat, and 300/1000ths of a beat (because each beat division is 1/1000 of a beat).

You can select only part of the position in the Time display and enter a new number for that position. For example, you can select only measures, or measures and beats. The other categories keep their present values.

Setting the Playhead Using the Playhead Position Value Slider

Below and to the left of the transport controls is the Playhead Position value slider. When a project is playing, the Playhead Position value slider constantly updates to show the current position of the playhead. You can set the playhead by entering a new position in the Playhead Position value slider.

The units shown in the Playhead Position value slider depend on the project time format. For projects set to Time-based time format, the units appear as timecode, using the currently selected Time ruler units. For projects set to Beats-based format, the units appear as measures, beats, and beat divisions at the current tempo.

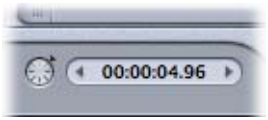
You can change the value in a value slider in one of several ways: You can enter a new value, change the value incrementally using the Decrement and Increment arrows, or drag the slider left or right.

To change the playhead position by entering a value:

1. Double-click the value slider.

   The value slider becomes a value field, with the current value selected.

2. Type a new value into the field, using appropriate punctuation.
3. Press Tab or Enter to confirm the new value.



To change the playhead position in increments:

- Click the Decrement arrow to move the playhead left (earlier in time) in increments, or click the Increment arrow to move the playhead right (later in time) in increments.

To change the playhead position by dragging:

- Click in the center area of the value slider (where the numbers are), then drag left to move the playhead left (earlier in time) or drag right to move it right (later in time).

For projects set to Time-based time format, the Decrement and Increment arrows move the playhead in seconds. For projects using Beats-based time format, the arrows move the playhead in beats.

Scrubbing a Project

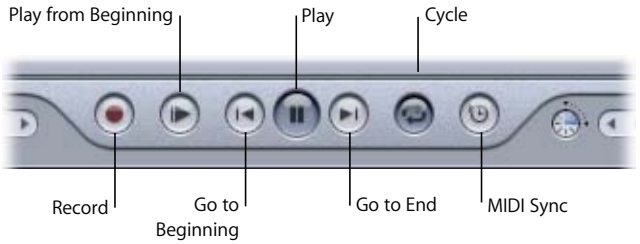
You can scrub a project in the Timeline. *Scrubbing* the project lets you hear the audio at the playhead position as you drag the playhead, so you can find a particular sound or event in the audio file.

To scrub a project:

- In the Timeline, drag the playhead left or right at the speed you want to scrub the audio file.

Controlling Playback with the Transport Controls

You use the transport controls to control playback of your project. The transport controls let you set the playhead to various points in time, start and stop playback, activate the playback region, and start a recording session to record your own audio.



- *Record:* Starts recording at the playhead position on the track you have enabled for recording. If no track is enabled, a new track is created when recording starts.
- *Play from Beginning:* Starts playback from the beginning of the project. Playback begins immediately, whether the project is playing or is stopped when you click the button.
- *Go to Beginning:* Sets the playhead to the beginning of the project. If the playback region is active, and the playhead is after the beginning of the playback region in time, the playhead is set to the beginning of the playback region.
- *Play:* Starts playing back the project from the current playhead position. Clicking the Play button again stops playback at the current playhead position.
- *Go to End:* Sets the playhead to the end of the project. If the playback region is active, and the playhead is before the end of the playback region in time, the playhead is set to the end of the playback region.
- *Cycle:* If a playback region is set, clicking the Cycle button toggles whether the playback region is active or inactive. If no playback region is set, clicking the Cycle button sets the project to repeat from the beginning when the playhead reaches the end of the project. For information on setting the playback region, see "Working with the Playback Region" on page 93.
- *MIDI Sync:* Synchronizes playback with incoming MIDI Clock and MIDI Timecode (MTC) signals.

Controlling Playback Using Keyboard Shortcuts

There are a number of keyboard shortcuts you can use to control playback of your project. To use keyboard shortcuts, the pointer cannot be in a text field.

- *Space bar:* Plays back the project from the current playhead position. If the project is playing, pressing the Space bar sets the playhead back to the point from which the project started playing. This is equivalent to clicking the Play button.
- *Return:* Sets the playhead to the beginning of the project. If the playback region is active, pressing Return sets the playhead to the beginning of the playback region. This is equivalent to clicking the Go to Beginning button.
- *Shift-Return:* Sets the playhead to the beginning of the project, and starts playback if it is stopped. This is equivalent to clicking the Start from Beginning button.

For a complete list of Soundtrack keyboard shortcuts, see Appendix B, "Soundtrack Keyboard Shortcuts," on page 189.

Locating and Adding Audio Files

You can locate media files to use in a project using the Media and Effects Manager, or drag files from the Finder. The Media and Effects Manager gives you three ways to locate audio files: the Browser, Favorites, and Search tabs. You can also store media files for a project in the Bin for easy access in a project.

Supported Audio File Formats

You can add AIFF, WAV, MP3, and AAC (except protected AAC) files to a project. You can also add QuickTime (.mov) audio files and STAP (Soundtrack Pro Audio Project) files. You can import audio files with any combination of the following sample rates and bit depths:

Sample Rates

- Any sample rate from 8 kHz to 192 kHz

Bit Depths

- 8 bit
- 16 bit
- 24 bit
- 32 bit (both integer and floating point)

Note: Files with lower bit depths or sample rates do not have the same playback quality as do higher-rate formats.

Looping and Non-Looping Files

Soundtrack supports two types of audio files: *looping* and *non-looping* files. Most audio files are non-looping files unless they contain tags for tempo, key, and other information.

Many of the Apple Loops that come with Soundtrack, as well as other tagged audio files, can be looping files. Looping files may contain music, rhythmic sounds, or other repeating patterns. You can resize a looping file to fill any amount of time. Looping files adjust to the project tempo and key, letting you use loops recorded in different keys and at different tempos in the same project.

Non-looping files do not adjust to the project tempo and key. You can shorten or lengthen a non-looping file, but lengthening it beyond the size of the original file adds only silence to the lengthened part. You can search for non-looping files in the Search tab using the Search text field.

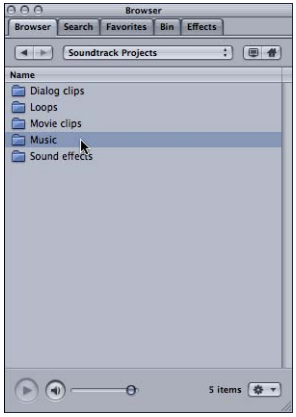
Both looping and non-looping files can contain tags with information about the file, including mood, genre, and musical instrument. Soundtrack recognizes tags in audio files intended for use with loop-based music applications. You can open an audio file in Apple Loops Utility and add tags, and can convert a looping file to a non-looping file, or convert a non-looping file to a looping file. For information about tagging audio files using Apple Loops Utility, see Appendix A, "Using Apple Loops Utility," on page 173.

Using the Browser to Locate Files

The Browser tab shows the hard disks and other storage media connected to your computer, and lets you browse through the file hierarchy to find audio files located on disk.

To locate audio files using the Browser:

- Double-click a volume or folder in the Browser to view its contents.



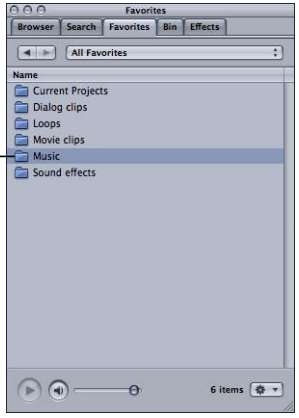
- You can move back through the previous locations in the Browser using the Forward and Back buttons, or through the levels of the file hierarchy using the Path pop-up menu.

Using Favorites to Locate Files

Favorites let you store frequently used file locations, so that you can access them directly. You can add and remove Favorites from the Media pop-up menu at the lower-right corner of the Media and Effects Manager.

To locate audio files in Favorites:

- Double-click the disk or folder you want to open.



You can move back through the previous locations in the Favorites tab using the Forward and Back buttons, or through the levels of the file hierarchy using the Path pop-up menu.

Using Search to Locate Files

Using Search, you can search for media files to add to your project. Search has two views: Column view and Button view. You choose which view to display by clicking the Column View or Button View button in the upper-left area of the window. In both views, the files matching your search criteria appear in the Search Results area, along with columns displaying additional information for tagged files. You can sort these columns by clicking the heading on top of each column. You can also perform text searches in both views, and refine your searches.

If you use Apple Loops or other tagged audio files in a project, you can search based on a variety of criteria, including musical instrument, genre, time signature, mood descriptor, and scale type. You can also search using specific keywords.

To display the Search tab:

- Click Search in the Media and Effects Manager.

Searching for Files in Column View

In Column view, the upper area of the Media and Effects Manager displays two columns: Keywords shows the categories of files that meet the search criteria, and Matches shows the total number of matching files and any subcategories containing matching files, with the number of matching files in each.

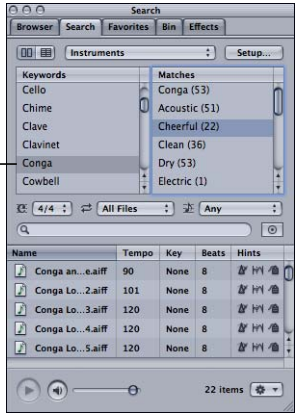
Clicking a keyword displays the files matching that keyword in the Search Results area. You can refine your search results by narrowing the criteria using the subcategories in the Matches column.

To search for files in Column view:

1. Choose the type of keywords to display in the Keywords list from the Keywords pop-up menu.

   You can use the Time Signature and Scale Type pop-up menus to restrict matches by those categories.

2. Select a keyword in the Keywords list to display matching files in the Search Results area.



Select a keyword to display the matching files in the Search Results area.

The hints, tempo, key, and number of beats for each matching file are also displayed.

You can also perform text searches, which can be especially helpful for non-tagged files. When you type text in the Search Text field, any files with the text in their file path or filename appear in the Search Results list. The number of files appears in the Matches column under "No Category."

To search using the Search Text field:

- Enter text in the Search Text field.

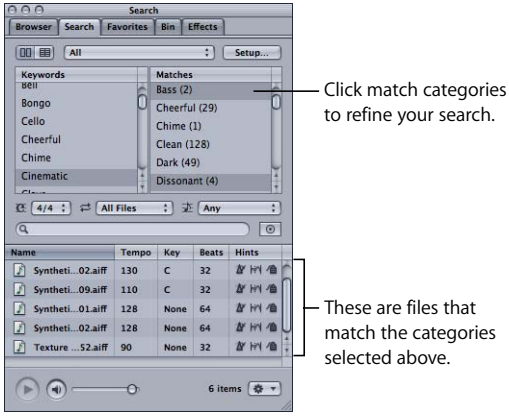
As you type, files matching the characters you type appear in the Search Results field.

Refining a Search in Column View

There are several ways you can refine your searches in Column view. You can select items in the Matches column to add the matching files for each category to the search results, and you can enter text in the Search Text field to narrow your search to files that include the text in their file path. Selecting multiple keywords in the Keywords list narrows the search results to files matching all the selected keywords.

To refine your search using the Matches column:

- Click to select a match category, or Command-click to select multiple match categories.



To refine your search by selecting multiple keywords:

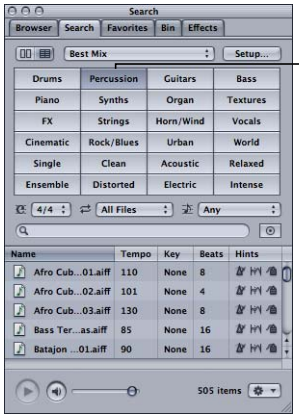
- Shift-click to select adjacent keywords, or Command-click to select nonadjacent keywords.

Searching for Files in Button View

In Button view, the upper area of the Media and Effects Manager displays a grid of buttons, each of which is labeled with a keyword. The keywords displayed are determined by the Keywords pop-up menu; the choices are Best Mix, Instruments, Genre, Descriptors, and Custom. The keywords for each choice are fixed, and appear whether or not matching files for the keyword exist. Keywords for which no matching files exist are dimmed.

To search for files in Button view:

1. Choose the type of keywords to display on the keyword buttons from the Keywords pop-up menu.
2. You can optionally use the File Type, Time Signature, and Scale Type pop-up menus to restrict matches by those categories.
3. Click a keyword button to display matching files in the Search Results area.



Click a button to display the matching files in the Search Results area.

You can also perform text searches, which can be especially helpful for non-tagged files. When you type text in the Search Text field, any files with the text in their file path or filename appear in the Search Results list.

To search by file path or filename:

- Enter text in the Search Text field.

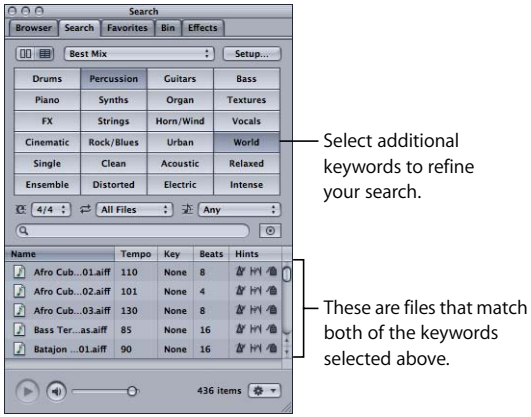
As you type, files matching the characters you type appear in the Search Results field.

Refining a Search in Button View

There are several ways you can refine your searches in Button view. You can select multiple keyword buttons to narrow your search results to files matching all the selected keywords, and you can enter text in the Search Text field to narrow your search to files that include the text in their file path.

To refine your search using multiple keywords:

- Command-click multiple keyword buttons.



Adding Custom Keywords

You can add custom keywords, which appear in the Keywords list in Column view and on the keyword buttons in Button view. Custom keywords can be added only in Button view.

To add a custom keyword:

1. Choose Custom from the Keyword Type pop-up menu.
2. Control-click one of the buttons in the grid, then choose a custom keyword from the shortcut menu.

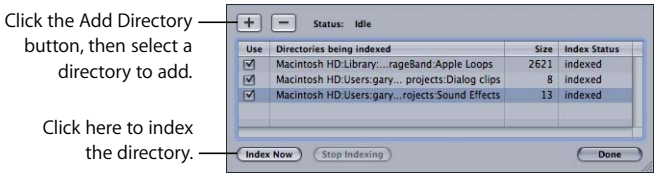
Adding a Directory to the Search Database

Search looks through all indexed directories (volumes and folders) for files that match your search criteria. Before a file can appear in Search, you must add the directory containing the file to the Search database and index the directory.

Note: The Search database does not update automatically. If you add files to an indexed directory, you must index the directory again before the files will appear in the Media and Effects Manager.

To add a directory to the Search database:

1. Click the Setup button at the top of the Search tab.
2. In the Setup dialog, click the Add Directory (+) button.



3. In the file dialog, navigate to the directory you want to add, then click Open.

   The directory appears in the list in the Setup dialog. You can resize the dialog if you need to see more items in the list.

4. Select the directory in the list, then click the Index Now button.

   Note: Indexing a large collection of files may take several minutes. The bottom of the Add Directory dialog displays the progress of the directory being indexed. If you need to interrupt the indexing process, click the Stop Indexing button. You can re-index the directory later. You can deselect items you do not wish to re-index.

5. When Soundtrack is finished indexing the directory, click Done to return to the Media and Effects Manager.

Removing a Directory from the Search Database

If you move or change your collection of audio files, you can remove a folder from the Search database. Removing unneeded folders from the database can shorten search times and eliminate extraneous results.

To remove a folder from the Search database:

1. Click the Setup button at the top of the Search tab.
2. In the Setup dialog, select the directory you want to remove, then click the Remove Directory (-) button.

Click the Remove Directory button to remove the selected directory.

3. Click Done to return to the Media and Effects Manager.

Once you have added the folders containing your audio files to the Search database and indexed them, you can use Search to find the files. In both Column view and Button view, the audio files that match the search criteria appear in the Search Results area in alphabetical order. You can preview files in the File list and drag them to the Timeline. You can also add a folder to your Favorites from the Search tab.

Storing Files in the Bin

The Bin shows all of the clips added to the project. You can add audio files to the Bin for easy access to files you may want to add to the current project. Audio files appear in the Bin in alphabetical order.

To add a file to the Bin, do one of the following:

- Drag the file from the Finder to the Bin.
- Drag the file from the Browser, Favorites, or Search tab to the Bin.

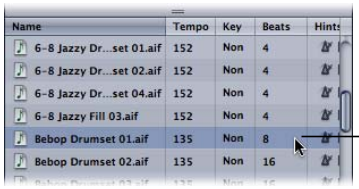
Files added to the Bin but not included in the project appear dimmed in the Bin.

Previewing Audio Files

Once you locate an audio file you want to use in your project, you can preview the file in the Media and Effects Manager. When you preview files, Soundtrack matches the sample rate of the file to the project sample rate. When you preview looping files, Soundtrack matches their tempo and key to the project tempo and key.

To preview an audio file:

- Select the file in the Media and Effects Manager.

The selected file starts playing. If the project is playing when you preview a file, Soundtrack starts playback of the previewed file on the downbeat of the next measure of the project. You can turn preview playback on and off by holding down Option and pressing the Space bar.

Name
Tempo
Key
Beats
Hints
6–8 Jazzy Dr...set 01.aif 152 Non 4
6–8 Jazzy Dr...set 02.aif 152 Non 4
6–8 Jazzy Dr...set 04.aif 152 Non 4
6–8 Jazzy Fill 03.aif 152 Non 4
Bebop Drumset 01.aif 135 Non 8
Bebop Drumset 02.aif 135 Non 16
Select an audio file in the Media and Effects Manager to preview it.

Audio files tagged as loops play back repeatedly when previewed. You can control the playback of the file being previewed using the preview controls. You can only preview one audio file at a time.

You can also preview video files. When you double-click a video file in the Media and Effects Manager, the video appears in a small window in the Details tab.

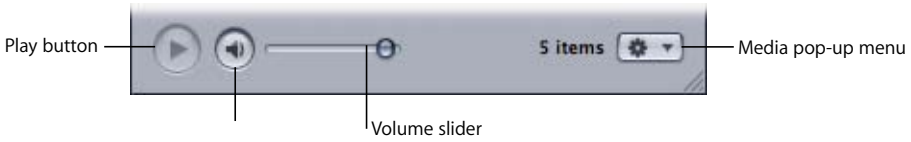
To preview a video file:

1. Click the Details tab in the Utility window to make the tab active.
2. Select the video file in the Media and Effects Manager.
3. Click the Play button in the preview controls at the bottom of the Media and Effects Manager. To stop playback, click the Play button again.

For more information on working with video files, see Chapter 7, "Working with Video in Soundtrack," on page 115.

Using the Preview Controls

The Preview area at the bottom of the Media and Effects Manager contains controls you can use when previewing audio files.



- *Play button:* Starts playback of the preview file. If the file is playing, stops playback.
- *Mute button:* Mutes playback of the preview file without stopping project playback. Clicking the button again unmutes the preview file.
- *Volume slider:* Sets the playback volume of the preview file.
- *Media pop-up menu:* Choose whether to add the file to Favorites, open it in Apple Loops Utility, or reveal it in the Finder.

To preview an audio file with a project:

1. Click the Play button in the transport controls to play the project.
2. When the project reaches the point in time where you want to hear the preview file, select the file in the Media and Effects Manager.

To preview a file without the project (solo):

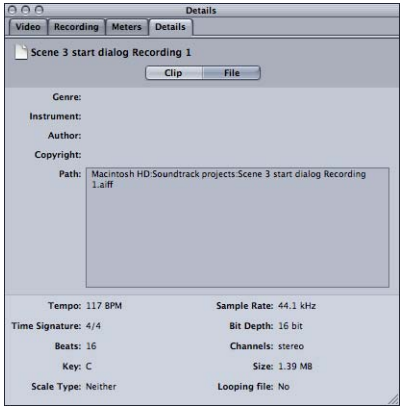
1. If the project is playing, click the Stop button in the transport controls to stop playback of the project.
2. Select the file in the Media and Effects Manager to preview the file.

You can also preview a video file using the preview controls. For information about previewing a video file, see "Playing the Video" on page 117.

Viewing Audio File Information

You can view information about an audio file in the Media and Effects Manager or the Timeline in the Details tab of the Utility window.

When you select an audio file in the Media and Effects Manager, the Details tab displays the file path and other information about the file. The following information is displayed in the File tab of the Details tab:



- *Name:* The name of the file
- *Hints:* The hints provided for the file. Hints are file tags that are used to search for files or for tempo and key matching.
- *Instrument:* The instrument or instrument category to which the file belongs
- *Author:* The author of the file
- *Copyright:* The copyright information for the file
- *Path:* The path to the file's location on disk
- *Tempo:* The original tempo of the file
- *Time Signature:* The time signature of the file
- *Beats:* The number of beats recorded in the file. For non-looping files, this field shows the duration (length) of the file in seconds.
- *Key:* The original key of the file
- *Sample Rate:* The sample rate at which the file was recorded
- *Bit Depth*: The bit depth at which the file was recorded
- *Channels*: The number of audio channels the file contains
- *Size*: The file size in kilobytes
- *Genre*: The musical category to which the file belongs
- *Length:* The duration of the file in seconds
- *Looping* file*:* Indicates whether the file is a looping file (Yes) or a non-looping file (No).

Note: The information that is displayed depends on whether or not the file is tagged. Untagged files may not display information for all categories. For more information on file tags, see Appendix A, "Using Apple Loops Utility," on page 173.

You can also view and edit audio clip properties in the Details tab. For information about viewing and editing clip properties, see "Viewing and Editing Clip Properties" on page 85.

Using Undo and Redo

As you edit clips and perform other operations in projects, you might need to use the Undo and Redo commands. For example, if you don't like the last change you've made to a project, it can usually be undone. Then, if you decide you prefer to keep the change you just undid, you can redo the command immediately after using Undo.

You can also use the Undo and Redo commands as a quick way of trying out changes to your project. You can make changes to any aspect of the project, then use Undo to step back through changes you don't like to the project's previous state. If you change your mind after undoing a change or set of changes, you can always use Redo to recover the changes. At any point, you can save a new version of the project using the File > Save As command.

You can use the Undo command repeatedly to undo every change made since the project was last saved.

To undo the last change:

- Choose Edit > Undo [*item*] (or press Command-Z).

The [*item*] in the menu changes to show the last command or operation.

You can use the Redo command repeatedly to redo every undone change since the project was last saved.

To redo the last change:

- Choose Edit > Redo [*item*] (or press Command-Shift-Z).

The [*item*] in the menu changes to show the last command or operation.

Using Snap

When you move and resize clips in the Timeline, you usually want them to start and end at a specific point in time. To synchronize clips with a video, you may want to position them in line with a specific frame. In a music-based project, you may want to align clips with measures and beats. Soundtrack includes a snap feature that causes clips, the playhead, and other items in the Timeline to "snap" to the nearest Snap To position.

Snap applies to the following operations:

- Dragging audio clips to the Timeline
- Moving audio clips
- Resizing audio clips
- Setting the playhead
- Setting the playback region
- Inserting markers
- Moving markers
- Selecting Timeslices
- Adding envelope points
- Moving envelope points
- Moving crossfade edges

You can use snap to ensure that audio clips are synchronized to a measure or beat, that they begin playing back at a precise point in time, and that they are precisely aligned with other clips in the Timeline.

When you turn on snap, the item you are moving snaps to the nearest Snap To position in the Timeline. The available Snap To values depend on the time format of the project. For projects set to Time-based format, the available Snap To values are:

- Ruler ticks
- Seconds
- Frames
- Adjacent Tracks
- Markers

For projects set to Beats-based format, the available Snap To values are:

- Ruler ticks
- 1/4 notes
- 1/8 notes
- 1/16 notes
- 1/32 notes
- 1/64 notes
- Markers
- Clips on Adjacent Tracks

To turn snap on:

- Choose View > Snap (or press N).

A checkmark next to the menu item indicates that snap is turned on. Choose View > Snap again to turn snap off.

To set the Snap To value:

- Choose View > Snap To, then choose a value from the submenu.

You can temporarily defeat snap while you work in the Timeline. When you defeat snap, you reverse the current snap state.

To defeat snap:

- Select the item in the Timeline, then hold down the Command key as you drag the item.

If snap is turned on, Command-dragging lets you move the item without having it snap to the nearest Snap To position. If snap is turned off, the item snaps to the nearest Snap To position. When you release the Command key, items moved in the Timeline follow the normal snap state.

Reconnecting Media Files

Because Soundtrack projects contain references to media files, and not the files themselves, a project cannot play back if the media files it uses are erased or moved. When you open a project in Soundtrack, the application checks to see if the media files it uses exist in the same location as they did when the project was last opened. If the media files are not in the expected location, Soundtrack displays a Can't Find File dialog, with three choices.

- *Skip File:* Opens the project without reconnecting the missing file.
- *Cancel:* Cancels the Open command.
- *Find File:* Presents a dialog that lets you locate the missing file and reconnect it to the project.

If you choose to open the project without reconnecting its files, you can reconnect individual audio files from the Bin tab, and reconnect a video file in the video track in the Timeline.

To reconnect an audio file:

1. Do one of the following:
   - Control-click the audio file in the Bin tab, then choose Reconnect [*filename*] from the shortcut menu.
   - Select the clip in the Bin tab, then choose Reconnect [*filename*] from the Media pop-up menu.
   - Select the clip in the Timeline, then choose Clip > Reconnect.
   - Control-click the clip in the Timeline, then choose Reconnect from the shortcut menu.
2. In the dialog that appears, locate the audio file you want to reconnect.
3. Click Open to reconnect the file.

To reconnect a video file:

1. Control-click the video clip in the video track, then choose "Reconnect offline source" from the shortcut menu.
2. In the dialog that appears, locate the video file.
3. Click Open to reconnect the file.

Setting Soundtrack Preferences

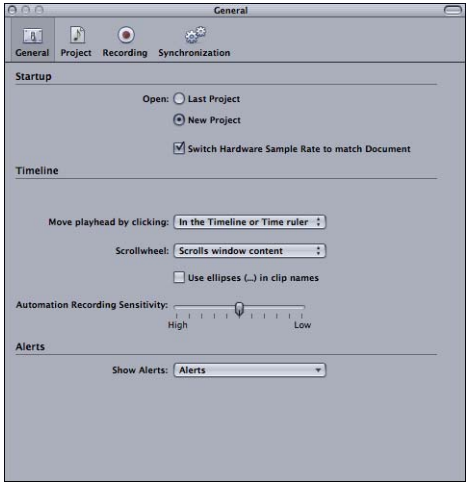
You set preferences for various aspects of Soundtrack that affect both the appearance and operation of the application in the Preferences window. Some preferences apply to the current project, and some apply to new projects you create. You may want to specify some preferences before you begin working in Soundtrack.

To open the Preferences window:

- Choose File > Preferences.

General Preferences

The General preferences include program startup behavior, Media and Effects Manager options, and Timeline defaults for new projects.



Startup

These preferences let you set the startup behavior when you open Soundtrack.

- *Open Last Project button:* Reopens the last project on startup.
- *Open New Project button:* Creates a new, blank project on startup. This is the default behavior.
- *Switch Hardware Sample Rate to match Document checkbox:* When selected, the sample rate of any connected audio device switches to match the project sample rate when you open Soundtrack or change the active project. The checkbox is selected by default.

Timeline

These preferences let you set the default Snap To value, default track height, and other aspects of the Timeline.

- *Use ellipses (...) in clip names checkbox:* When selected, clips in the Timeline with long names are center-truncated with an ellipsis. "Use ellipses (...) in clip names" is deselected by default.

  Note: Selecting "Use ellipses in clip names" can impact the speed at which the screen is redrawn during playback.

- *Scrollwheel pop-up menu:* Choose whether an attached mouse with a scrollwheel scrolls the Timeline or zooms in or out at the playhead position.
- *Automation Recording Sensitivity slider:* Drag to set the level of sensitivity with which onscreen movements are recorded. Setting the slider to High results in all movements being recorded.

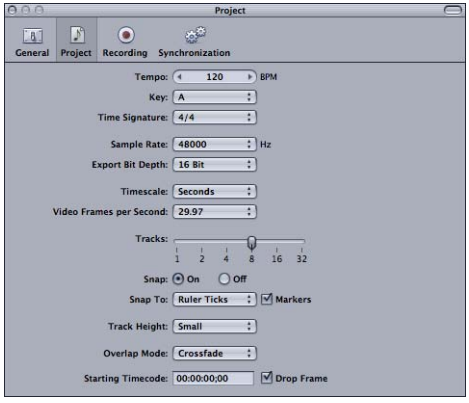
Alerts

This preference lets you control when certain alerts appear.

- *Show alerts pop-up menu:* Choose whether to show disk overload and unsupported sample rate alerts when the conditions causing these alerts occur.

Project Preferences

These preferences let you set project properties and other default settings for new projects you create.

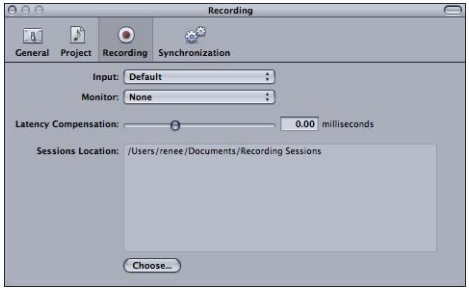


- *Tempo value slider:* Sets the default tempo for new projects in beats per minute (bpm). The range is 60 to 200 bpm.
- *Key pop-up menu:* Sets the default key for new projects. The range is any key in the chromatic scale from A to G#, or None.

- *Time Signature pop-up menu:* Sets the default time signature for new projects. The choices are 3/4, 4/4, 5/4, 6/8, and 7/8.
- *Sample Rate pop-up menu:* Sets the default sample rate for new projects. The choices are 32 kHz, 44.1 kHz (CD-quality audio), 48 kHz (DVD-quality audio), and 96 kHz. The default is 48 kHz.
- *Export Bit Depth pop-up menu:* Sets the export bit depth for the current project and new projects. The choices are 16-bit (CD-quality audio) and 24-bit.
- *Timescale pop-up menu:* Choose whether the overall project uses Time-based or Beats-based time format.
- *Video Frames per Second pop-up menu:* Choose which video frame rate to use for new projects.
- *Tracks slider:* Sets the default number of tracks for new projects.
- *Snap buttons:* Turn snap on or off for new projects.
- *Snap To pop-up menu:* Sets the default Snap To value for new projects. The choices are Ruler Ticks, 1/4 notes, 1/8 notes, 1/16 notes, 1/32 notes, and 1/64 notes.
- *Track Height pop-up menu:* Sets the default track height for new projects. The choices are Reduced, Small, Medium, and Large.
- *Overlap Mode pop-up menu:* Sets whether overlapped clips are crossfaded or truncated for new projects.
- *Starting Timecode field:* Sets the starting timecode value.

Recording Preferences

These preferences let you specify settings for recording audio.



- *Input pop-up menu:* Displays the available devices for audio input. Choose an input device from the pop-up menu.
- *Monitor pop-up menu:* Displays the available devices for monitoring audio output. Choose an output device from the pop-up menu.

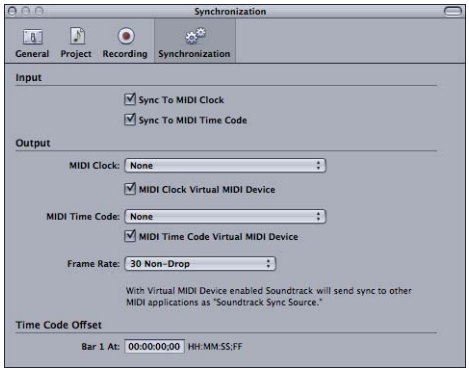
- *Latency Compensation slider:* Sets the amount of latency compensation in milliseconds. If recorded audio is late, drag the slider right. If the recorded audio is early, drag the slider left.

  For information on eliminating latency, see "Eliminating Recording Latency" on page 196.

- *Sessions Location display:* Displays the default location to which recording sessions are saved. You can set the save location by clicking the Choose button and navigating to a new location.

Synchronization Preferences

These preferences let you specify synchronization settings.



Input

- *Sync To MIDI Clock checkbox:* Sets Soundtrack to receive MIDI Clock signals from a MIDI application or external device.
- *Sync To MIDI Time Code checkbox:* Sets Soundtrack to receive MIDI Time Code (MTC) signals from a MIDI application or external device.

Output

- *MIDI Clock pop-up menu:* Choose the device to send MIDI Clock to, or choose None.
- *MIDI Clock Virtual MIDI Device checkbox:* Sets Soundtrack to send MIDI Clock signals to MIDI applications as "Soundtrack Sync Source."
- *MIDI Time Code pop-up menu:* Choose a device to send MTC signals to, or choose None.
- *MIDI Time Code Virtual MIDI Device checkbox:* Sets Soundtrack to send MTC signals to MIDI applications as "Soundtrack Sync Source."
- *Frame Rate pop-up menu:* Sets the frame rate for outgoing MTC signals. (Note that Soundtrack automatically detects the frame rate for incoming MTC signals.)

Time Code Offset

- *Bar 1 At field:* Sets the offset of Measure 1 of your Soundtrack project in SMPTE format. The offset affects both incoming and outgoing MTC signals. This should be set to the same value in all applications and devices.

Working with Projects

5

Using Soundtrack, you can create multitrack projects in which you arrange and mix audio clips. Projects include tracks, busses, and outputs that you can use to create sophisticated mixes.

When you create a project, you can set the project's properties and the project length. You locate and add media to your project using the Media and Effects Manager.

Creating and Opening Projects

When you open Soundtrack, a new, blank project appears. You can change the default startup behavior in the Preferences window. For information about setting preferences, see "Setting Soundtrack Preferences" on page 73.

To create a new project:

- Choose File > New > Multitrack Project (or press Command-N).

A new, untitled project appears. You can name the project when you save it. For information on saving projects, see "Saving Projects" on page 82.

To open an existing project:

1. Choose File > Open (or press Command-O).
2. Locate and select the project, then click Open.

You can also open a recently open project by choosing it from the File > Open Recent menu, and can open a project by dragging it onto the Soundtrack icon in the Dock.

You can have multiple projects open in Soundtrack, and cut and paste between them, but you can only play one project at a time. You can open projects created with Soundtrack version 1.x that have the extension .loop, but can only save them as multitrack projects (with the extension .stmp). You can also open Soundtrack Pro v1.x multitrack projects (with the file extension .stmp) with Soundtrack, but they may not include all of the effects. (Additionally, Soundtrack projects can be opened from Soundtrack Pro.)

Closing Projects

To close a project:

- Select the project's tab in the Project window, then choose File > Close Project (or press Command-Shift-W).

Setting Project Properties

Each project has a set of project properties, which include time format, sample rate, tempo, time signature, key, and overlap mode. Each project property has a default setting, described below. You can change the project properties using the project controls in the Project window in the Timeline.

The most important project properties are time format and sample rate. The remaining properties (tempo, time signature, and key) are important for projects set to Beats-based format. For projects set to Time-based format, you can usually leave the tempo, time signature, and key properties at their default settings.

You can change the default project properties for new projects in the Project pane of the Preferences window. For information on setting preferences, see "Setting Soundtrack Preferences" on page 73.

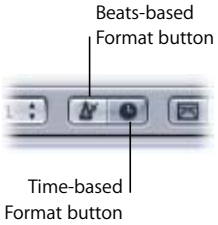
Time Format

Each project has a project time format, which can be either *Time-based* or *Beats-based* format. Setting the time format controls the appearance of the Time display, Time ruler, Timeline gridlines, and available Snap To values. For projects set to Time-based format, time is displayed using the Time ruler units chosen in the View menu. For projects set to Beats-based format, the time is displayed in measures, beats, and beat divisions. The default format is Time-based.

Setting the format to Time-based lets you align clips and other items in the Timeline with specific points in time, for example, specific frames in a video file. Setting the format to Beats-based lets you align items in the Timeline with measures, beats, and other musical units of time, regardless of tempo. You can switch between Time-based and Beats-based format while working on a project.

To set the time format:

- Click the Time-based Format button to set the format to Time-based, or click the Beats-based Format button to set the format to Beats-based.



You can also set individual tracks to use a different time format than the project's time format. For information on setting a track's time format, see "Changing Track Time Format" on page 98.

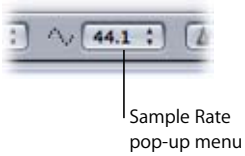
Sample Rate

The project sample rate determines the number of samples per second Soundtrack uses for audio playback and export. When you add audio files to your project, their sample rate is matched (upsampled or downsampled) on the fly to the project sample rate. The available sample rates are 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, and 96 kHz. The default is 48 kHz, which is the standard for DVD-quality audio.

Note: Digital video projects, including video for DVD, often use a 48 kHz sample rate. When creating a score for a video, be sure you save and export your project at the same sample rate the final video project will use.

To set the sample rate:

- Choose the sample rate from the Sample Rate pop-up menu.



Note: If you open your project on a computer that cannot support the project sample rate, the project is resampled to the nearest rate the hardware supports for playback. When you export your project, it is exported at the project sample rate, regardless of hardware limitations. For more information on hardware sample rates, see Chapter 2, "Setting Up Your System," on page 21.

Tempo

The tempo sets the rate of the basic beat value for the project. When you add looping files to a project, their tempo is matched to the project tempo. The tempo range is from 60 to 200 beats per minute (bpm). The default tempo is 120 bpm (which equals two beats per second). You set the project tempo using the Tempo value slider in the project controls.

To set the project tempo, do one of the following:

- Click the left arrow in the Tempo value slider to decrease the tempo, or click the right arrow to increase the tempo.
- Click the value in the value slider, then drag the slider that appears left or right to change the tempo.
- Double-click the value in the value slider to select it, then type a new value.

You can change the project tempo over time using the Master Tempo envelope. For information about creating tempo changes, see "Master Envelopes" on page 144.

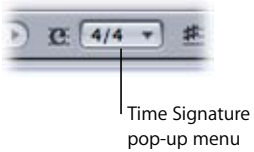
Time Signature

The time signature controls how measures and beats appear in the Time display and Time ruler. A project can have only one time signature, which lasts from the beginning to the end of the project. The default time signature is 4/4 (four beats per measure, with a quarter note as the beat value).

To set the project time signature:

- Choose a time signature from the Time Signature pop-up menu.

  If you want to use a time signature not included in the list, choose Other, enter the time signature in the dialog that appears, then click OK.



Note: The project time signature affects the format of the Playhead Position value slider. For projects using Beats-based time format, it also affects the appearance of the Time ruler and the gridlines in the Timeline. It does not affect the rhythm of audio clips. If your project uses audio clips with music in a definite time signature, make sure that the project time signature matches the time signature of the clips used in the project.

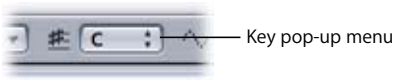
Key

The project key sets the root note (or tonic) for the project. When you add looping files to a project, their key is matched to the project key. You can set the project key to any note of the chromatic scale (from A through G#), or to None (–). The default key is A.

Note: The key does not determine the scale used (major, minor, or another scale), only the tonic or root note of the project.

To set the project key:

- Choose a key from the Key pop-up menu.



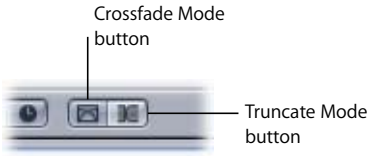
Overlap Mode

The project overlap mode determines what happens when you move an audio clip so that it partially or completely overlaps another clip on the Timeline. There are two overlap modes: crossfade mode and truncate mode.

In crossfade mode, when you drag an audio clip so that it partially overlaps another audio clip in a track in the Timeline, a crossfade is created for the overlapped part of the two audio files. You can adjust the boundaries of the crossfade in the Timeline. In truncate mode, when you drag an audio clip so that it partially overlaps another audio clip in a track in the Timeline, the overlapped part of the clip is truncated.

To set the project overlap mode:

- Click the Crossfade Mode button to set the project to crossfade mode, or click the Truncate Mode button to set the project to truncate mode.

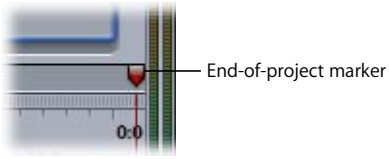


Setting the Project Length

By default, the length of a project depends on the media in the project. The project length is set to the end of the last clip in the project. If the project uses a time-based effect, and the effect extends past the end of the last clip, the project length extends to include the effect's "tail." Adding a clip to the end of the project, or adding an effect that produces a "tail," extends the project length to include the new clip or the effect's tail. You can optionally set the project to a definite length.

To set the project length:

- In the Timeline, place the playhead at the point where you want the project to end, then choose Mark > Set End of Project.



You can move the end-of-project marker to change the length of the project, or delete it if you decide you no longer want it in the project.

To delete the end-of-project marker:

- Select the marker in the Timeline, then choose Edit > Delete (or press the Delete key.)

Saving Projects

To save your project:

- Choose File > Save.

Soundtrack projects are saved as documents with the extension *.stmp*.

Important: When you save a project, the audio files used by the project are not saved as part of the project file. To play a project on another computer, you must install the audio files the project uses on that computer, or on a disk it can access. If you remove the audio files used in a project so that your computer cannot access them, you cannot play back the project.

You can save a project and the media files the project uses together. This makes it easy to move projects between computers, and ensures that all needed audio files are available for playback.

- When you select *Collect Audio Files,* the project file and all the audio files the project uses are saved in the same folder.
- When you select *Collect Video File,* the video file is included with the project and its audio files.

To save a project and its audio files together:

1. Choose File > Save.
2. In the dialog that appears, select the Collect Audio Files checkbox.
3. Navigate to the folder in which you want to save the project and its audio files, then click Save.

   The project file, and a copy of every audio file the project uses, are saved to the selected location.
4. You can optionally click the New Folder button to create a new folder for the collected project. It's a good idea to save each collected project in its own folder.
5. If the project includes a video file, you can optionally select the Collect Video File checkbox to save the video to the selected location.

   If the folder already contains any of the media files, an alert appears, asking if you want to replace the existing files.

   Note: Because video files are typically very large files, saving a copy of the video file may take several minutes and may require a large amount of disk space.

You can also save a compressed version of the project. When you save a project compressed, the data used to draw the audio waveforms in the Timeline is not saved. This reduces the size of the project, but means that the waveforms must be redrawn each time the project is opened.

To save a project compressed:

- In the Save dialog, select the Save Compressed checkbox.

Adding Audio Files to a Project

Once you've located and previewed an audio file you want to add, you drag the file to the Timeline to add it to the project. When you drag an audio file to the Timeline, Soundtrack creates an *audio clip* from the audio file, and adds the clip to the project. An audio clip does not contain the actual audio data; instead, it contains a reference to the file stored on disk. Editing an audio clip in the Timeline does not change the source audio file.

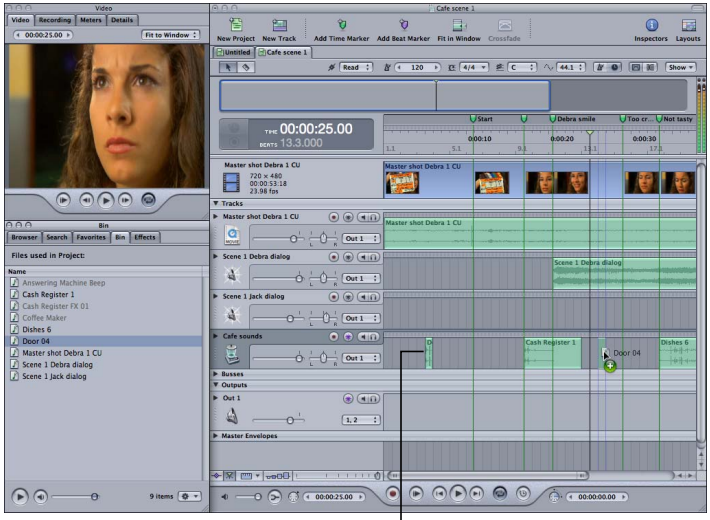
Each audio clip has a playback mode. For untagged files and files tagged as non-looping files, the clip playback mode is *non-looping*. For files tagged as looping files, the clip playback mode is *looping*. If the playback mode of a clip is looping, the clip appears with notched edges to indicate where the audio file repeats when you resize the clip.

To add an audio file from the Media and Effects Manager, do one of the following:

- Drag the file from the File list in the Media and Effects Manager to a track in the Timeline.
- Drag the file from the File list between two existing tracks.

  A new track is created and the clip is added to the track.
- Drag the file from the File list to the empty part of the Timeline below the outputs.

  A new track is created and the clip is added to the track.
- Drag a file from the File list to a track or to the part of the Timeline below the existing tracks.



To add an audio file from the Finder:

- Drag the file from the Finder to the Timeline to a track, between two existing tracks, or to the area below all existing tracks.

  When the Bin tab of the Media and Effects Manager is active, the Bin shows all of the audio clips in the project. You can drag a clip from the list to the Timeline to add a new clip from the same audio file at a different point in time, or to a different track.

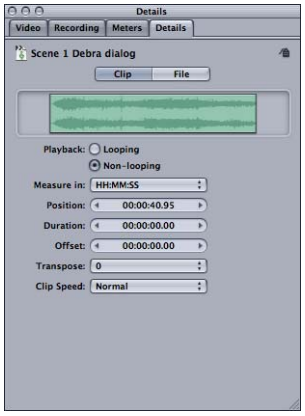
To add an audio file from the Bin tab:

- Drag the file from the Bin tab to the Timeline, either to a track or to the area below the existing tracks.

  Note: When you drag an audio file to the Timeline, the file snaps to the nearest Snap To position if snap is turned on. For information on setting the Snap To value, see "Using Snap" on page 70.

Viewing and Editing Clip Properties

When you create an audio clip by dragging an audio file to the Timeline, the audio clip has a set of properties. These properties are specific to the clip, and can be different for two clips created from the same source audio file.



The following properties for the selected clip are displayed, and can be edited, in the Clip tab of the Details tab:

- *Playback buttons:* Set whether the clip is looping or non-looping. When you add an audio file to the Timeline, the clip will be non-looping unless the audio file is tagged as a looping file.
- *Measure in pop-up menu:* Sets the units shown in the Position, Duration, and Offset value sliders.
- *Position value slider:* Sets the start point for the clip in the Timeline.
- *Duration value slider:* Sets the duration of the clip. The duration of looping files is displayed in number of beats; the duration of non-looping files is displayed in seconds.
- *Offset value slider:* Sets the number of beats (for looping files) or seconds (for non-looping files) from the beginning of the source file at which the clip begins playing.
- *Transpose pop-up menu:* Sets the transposition in semitones for looping files; the range is –12 to +12 semitones.
- *Clip Speed pop-up menu:* Sets the playback speed for looping files, which can be Quadruple, Double, Normal, Half, or Quarter.

Some properties can be changed by editing the clip in the Timeline. For detailed information on editing audio clips, see "Editing Audio Clips" on page 101.

The name of an audio clip appears on the clip in the Timeline. By default, the entire name appears on the clip if the clip is long enough to display it. You can change the default behavior in the General pane of the Preferences window, so that long clip names are truncated from the center. For information on setting preferences, see "Setting Soundtrack Preferences" on page 73.

Tracks, Busses, and Outputs

Soundtrack projects contain tracks, busses, and outputs, which appear as horizontal rows in the Timeline. Tracks, busses, and outputs are grouped together by category in the Timeline, with a separator between each category. You can move each type within its own category, but cannot move one to either of the other categories. Each track, bus, and output has a header with its icon, name, and a set of controls.

Tracks

Tracks contain the audio you add to your project in the Timeline. Each track has a drag handle, a name, an icon, and a set of controls that appear in the track's header in the Timeline. Track controls include a volume slider, a pan control, an output pop-up menu, and buttons to mute or solo the track, add effects, and enable the track for recording.

Busses

Using busses, you can create submixes, letting you adjust volume and pan and add effects to groups of related tracks. You use busses by adding sends to effects chains in the Effects tab, then routing audio from each send to a bus.

Each bus has a drag handle, a name, an icon, and a set of controls that appear in the bus's header in the Timeline. Bus controls are the same as track controls, except that a bus does not have a Record Enable button (because you can't record audio to a bus). The bus controls affect the audio of every track sent to that bus.

You route audio from a track to a bus by adding a send to the track in the Effects tab. When you add a send, the send is assigned to a bus. You can change the bus to which a send is assigned, and can adjust the volume and pan for the send.

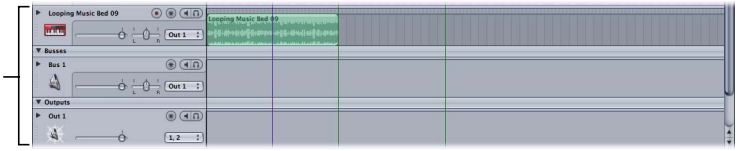
Sends allow you to route audio from multiple tracks to the same bus to create submixes. For example, you could route every dialogue track for a particular actor to a bus with the actor's name. You could adjust the volume of all the actor's dialogue using the bus volume fader, and add an EQ effect that brings out the actor's voice in the mix. You could then send (route) the bus to a particular output.

Outputs

Outputs let you route the audio from tracks and busses to physical outputs. If you are using external audio hardware that supports multiple physical outputs, you can add outputs to a project and choose the physical output to which each output in the project sends its audio. You can also send audio from multiple tracks or busses to a single output, control volume and pan for all the tracks using the output's controls, and add effects to the output.

For example, you could have a bus with the dialogue tracks for each actor, and route all the dialogue busses to a single output. You could route all sound effects tracks to another output, and adjust the volume or add effects to each output. For a final stereo mix, you could route both outputs to the same pair of physical output channels (channels 1 and 2, for example).

Each output has a drag handle, a name, an icon, and a set of controls that appear in the output's header in the Timeline. Output controls include a volume slider, a pop-up menu where you can choose the physical output channels for the output, and buttons to mute or solo the output and add effects. Outputs do not have pan controls or Record Enable buttons.



Tracks, busses, and outputs in the Timeline

For information about working with tracks, busses, and outputs in the Timeline, see "Working with Tracks, Busses, and Outputs" on page 94.

Working in the Timeline

6

The Timeline is where you arrange audio clips to build your soundtrack. You can also adjust volume and panning, add effects, and edit envelopes to control automation.

The Timeline displays a visual representation of a project, showing the point in time when audio clips start playing and their duration. You control when and how long clips play by moving and resizing them in the Timeline.

The Timeline is arranged in three sets of horizontal rows: tracks, busses, and outputs. You add audio clips to tracks, create submixes using busses, and send audio to physical output devices using outputs. For information about working with tracks, busses, and outputs, see "Tracks, Busses, and Outputs" on page 86.

The Timeline also displays vertical gridlines that make it easy to position clips precisely in time. The gridlines correspond to the divisions of time in the Time ruler. The units of time the gridlines display change depending on the time format and the current zoom level.

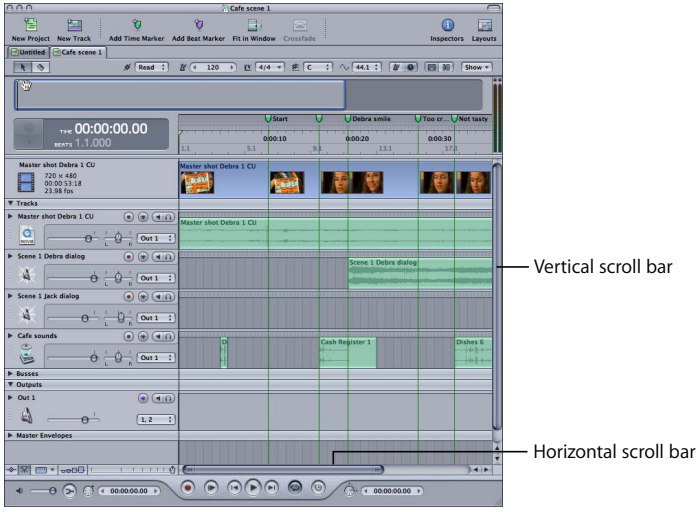
Moving Around in the Timeline

Soundtrack provides several controls that let you change the view of the Timeline and move to different parts of your project. You can zoom in or out for a closer or wider view of the Timeline, control how many tracks are displayed in the Timeline, and change which part of the project is currently visible using the scroll bars and Timeline controls. You can use the Global Timeline view to quickly move to different parts of your project.

Using the Scroll Bars

If the entire project cannot be displayed in the Timeline, you can scroll through the project using the horizontal scroll bar located at the bottom of the Timeline. Drag the horizontal scroll bar left or right to move the visible part of the Timeline.

If your project contains more tracks than can be displayed in the Timeline, a vertical scroll bar appears along the right edge of the Timeline. Drag the vertical scroll bar up or down to change which tracks are visible.



In the lower left of the Timeline are the Timeline controls, including the Track Height control and Zoom control.

Using the Zoom Control

You can zoom in to make precise edits in the Timeline, or zoom out for a wider view of your project using the Zoom control.

The Zoom control features a slider on a graduated scale. Moving the slider to the left or clicking the left side of the control zooms in for a closer view, displaying a smaller area of the Timeline close up. Moving the slider to the right or clicking the right side of the control zooms out for a wider view, displaying a wider area of the Timeline.

You can also zoom in and out using menu commands or keyboard shortcuts. If your mouse has a scroll wheel, you can use it to zoom in and out. You can also fit the entire project in the visible area of the Timeline.

To zoom in, do one of the following:

- Move the Zoom slider to the left.
- Click the left side of the Zoom control.
- Choose View > Zoom In.
- Press the Up Arrow key.
- Press Command-plus (+).
- If the mouse connected to your computer has a scroll wheel, move the scroll wheel up.

To zoom out, do one of the following:

- Move the Zoom slider to the right.
- Click the right side of the Zoom control.
- Choose View > Zoom Out.
- Press the Down Arrow key.
- Press Command-minus (–).
- If your mouse has a scroll wheel, move the scroll wheel down.

  By default, when you use the scroll wheel, the playhead remains in the same position, and the Timeline zooms in or out on both sides of the playhead. You can change the default scrollwheel behavior in the General Preferences pane so that using the scrollwheel scrolls the document rather than zooming it.

To fit the project in the visible area of the Timeline:

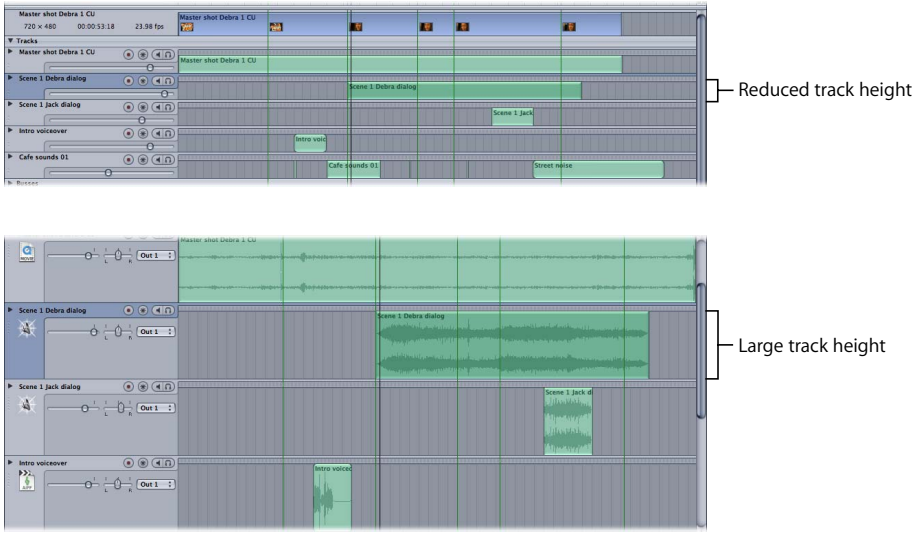
- Choose View > Fit in Window (or press Shift-Z).

Setting Track Height

You set the height of tracks, busses, and outputs in the Timeline using the Track Height control. The Track Height control has four settings. The smallest rectangle sets the track height to a minimized setting, with each track (and track header) reduced to half-height, allowing more tracks to be displayed in the Timeline.

To set the height of tracks, busses, and outputs:

- Click one of the four rectangles on the Track Height control.



Using the Global Timeline View

The Global Timeline view, located above the Time display and Time ruler, shows a miniature view of the entire project. The playhead appears as a black vertical line with a triangular handle. The part of the project currently visible in the Timeline is indicated by a blue rectangle in the Global Timeline view.

To move to a new area of the Timeline using the Global Timeline view:

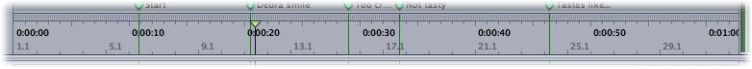
- Drag the visible area rectangle to a new position.

You can quickly move to different parts of the Timeline by dragging the blue rectangle. This is especially useful when working on longer projects. You can also drag the rectangle up or down to move vertically in the Global Timeline view. This is useful if your project contains more tracks, busses, and outputs than can be displayed in the Project window.

Using the Time Ruler

The Timeline has a Time ruler that shows the divisions of time in a project. You can set the playhead to a precise frame, point in time, or sample number using the Time-based units on the Time ruler, or to a specific musical measure or beat using the Beats-based units, to synchronize playback of audio clips in the Timeline.

The Time ruler changes depending on the time format of the project and the Time ruler units. If the project is currently set to Time-based format, Time-based units appear in the upper part of the ruler. If the project is set to Beats-based format, Beats-based units appear in the upper half of the ruler.



You can use the Time ruler to position clips or the playhead at a precise point in time, including synchronizing them to a specific timecode reference in a video file.

To set the playhead to a specific point in the Time ruler:

- Click the Time ruler at the point where you want to set the playhead.

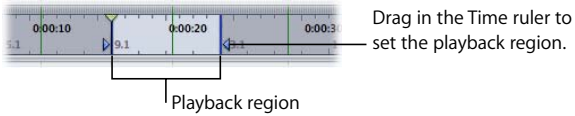
Working with the Playback Region

You can create a *playback region* in a project, an area that plays back repeatedly. This is sometimes called "cycling" or "looping" playback. A project has only one playback region, but you can move and resize it as often as you want.

You also use the playback region when recording multiple takes. For information on recording, see Chapter 10, "Recording Audio in Soundtrack," on page 159.

To set the playback region:

- Drag in the bottom half of the Time ruler from the beginning of where you want the playback region to the end.



The playback region is lighter in color than the rest of the Time ruler, with triangular markers indicating its start and end points. If a playback region already exists, you can drag anywhere in the Time ruler outside of the current playback region to set the playback region to a new position.

If cycling is turned off, you must turn it on for the playback region to be active. The Cycle button darkens to indicate that the playback region is activated.

To activate the playback region:

- Click the Cycle button in the transport controls.

To move the playback region:

- Click in the bottom half of the playback region and drag it to a new position in the Timeline.

To resize the playback region:

- Select either the start point or end point handle in the Time ruler and drag to resize the playback region.

To remove the playback region:

- Click in any part of the Time ruler outside of the current playback region.

Working with Tracks, Busses, and Outputs

The Timeline is arranged into three groups of horizontal rows: tracks, busses, and outputs. You add audio to tracks in your project, use busses to create and control submixes, and send audio to physical output channels using outputs. Tracks, busses, and outputs are described in greater detail in "Tracks, Busses, and Outputs" on page 86.

The tracks in a project appear in the upper part of the Timeline. Busses appear below tracks, and outputs appear below busses. A separator between each group helps visually distinguish them, and disclosure triangles on each separator let you show or hide the groups.

Adding Tracks, Busses, and Outputs

To add a track, do one of the following:

- Choose Multitrack > Add Track (or press Command-T).
- Control-click an open area of the Timeline, then choose Add Track from the shortcut menu.
- Control-click a track, then choose either Insert Track Before or Insert Track After from the shortcut menu.

To add a bus, do one of the following:

- Choose Multitrack > Add Bus.
- Control-click a bus, then choose either Insert Bus Before or Insert Bus After from the shortcut menu.

To add an output, do one of the following:

- Choose Multitrack > Add Output.
- Control-click an output, then choose either Insert Output Before or Insert Output After from the shortcut menu.

Selecting Tracks, Busses, and Outputs

You can select a track, bus, or output in order to move, copy, or remove it, and can also select tracks, busses, and outputs to export. The headers of selected tracks, busses, and outputs appear darker in the Timeline.

To select a track, bus, or output, do one of the following:

- Click the drag handle along the left edge of the header for the track, bus, or output.
- Click anywhere in the row for the track, bus, or output.

You can select multiple tracks, busses, or outputs.

To select adjacent tracks, busses, or outputs:

- Shift-click the drag handle in the header of each track, bus, or output you want to select.

To select nonadjacent tracks, busses, or outputs:

- Command-click the drag handle in the header of each track, bus, or output you want to select.

Moving and Copying Tracks, Busses, and Outputs

As you work on your project, you may want to rearrange tracks, busses, and outputs. You can move and copy them to change their vertical arrangement in the track, bus, or output section of the Timeline. You cannot move one to the area for another (as indicated by the rows labeled "Tracks," "Busses," and "Outputs").

You can only move or copy one track, bus, or output at a time.

To move a track, bus, or output:

- Drag the track, bus, or output drag handle up or down to a new vertical position.

  A light blue horizontal line in the header area indicates the place the track, bus, or output will be moved to when you release the mouse button.

To copy a track, bus, or output:

- Option-click the drag handle in the header for the track, bus, or output, then drag it up or down.

  A copy of the track, bus, or output appears when you release the mouse button.

Renaming Tracks, Busses, and Outputs

By default, tracks are numbered when created, and take the name of the first audio clip you add to them. Busses and outputs are numbered starting from one (Bus 1, Out 1, and so on). You can rename a track, bus, or output and use the names to distinguish the type of audio it contains (for example, dialogue, voiceovers, music, or sound effects), its part in the overall project, or to identify it in some other way.

To rename a track, bus, or output:

- Click the name field in the header for the track, bus, or output and type a new name.

Changing a Track, Bus, or Output Icon

You can choose a new icon from the icon grid, or add your own image to the grid.

To change the icon for a track, bus, or output, do one of the following:

- Click the icon, then select a new icon from the icon grid that appears.
- Drag a graphics file from the Finder to the icon.

Using the Track Controls

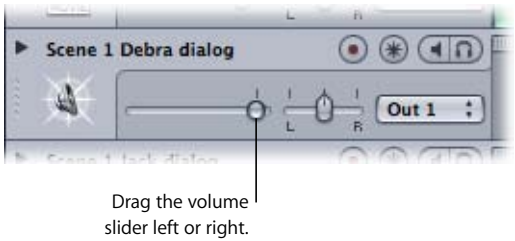
Tracks, busses, and outputs have headers, located along the left side of the Timeline. Each header contains track controls that you can use to mute or solo the track, bus, or output, adjust its volume level and pan position, add effects, and show or hide its envelopes.

Adjusting Volume

The volume slider controls the volume (the loudness relative to other tracks) of the track, bus, or output.

To adjust the volume level of a track, bus, or output:

- Drag the volume slider left or right.



Drag the volume slider left or right.

The range is –96 dB to +6 dB, with the default at 0 dB. Double-clicking the slider resets it to the 0 dB position.

Adjusting Pan Position

Tracks and busses also include a pan slider. The pan slider controls the *pan position* (the left-to-right placement in the stereo field) of the track.

To adjust the pan position of a track or bus:

- Drag the pan slider left or right.

The range is –100 (full left) to +100 (full right), with the default at 0 (center position). Double-clicking the slider resets it to the center position.

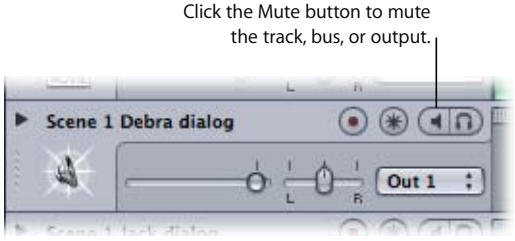
Muting and Soloing Tracks, Busses, and Outputs

The Mute button *mutes* (silences) the track, bus, or output. You can mute multiple tracks, busses, and outputs, allowing you to hear only the remaining, unmuted ones. Muting lets you compare the sound of the project using different combinations of tracks, busses, and outputs, and hearing the result of changes you make to them.

To mute a track, bus, or output:

- Click the Mute button. Click the Mute button again to unmute the track, bus, or output.

Muted tracks, busses, and outputs appear darker in the Timeline, making it easy to identify which tracks are currently audible.

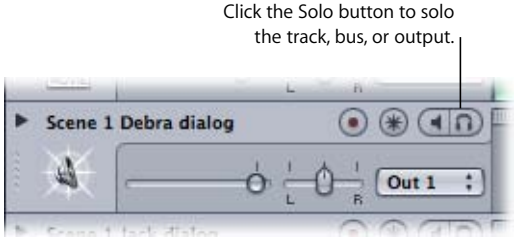


The Solo button *solos* the track, bus, or output, muting all others. Soloing a track, bus, or output lets you quickly isolate it from the rest of the project, so you can adjust the sound of the soloed track, bus, or output and make changes.

Soundtrack supports *multiple solo* and *exclusive solo*. Clicking the Solo button for multiple tracks, busses, or outputs solos them and mutes all others. When you exclusively solo a track, bus, or output, all others are muted, regardless of whether they are soloed.

To solo a track, bus, or output (multiple solo):

- Click the Solo button. Click the Solo button again to unsolo the track, bus, or output.



To exclusively solo a track, bus, or output:

- Option-click the Solo button. Click the Solo button again to unsolo the track, bus, or output.

When you solo tracks, busses, or outputs, the ones not soloed appear darker in the Timeline.

Changing Track Time Format

By default, tracks use the same time format as the project (Time-based or Beats-based). You can change the time format of a track, which changes the behavior of tagged clips when you change the project tempo.

When the track time format is Time-based, clips remain at the same time position (the same second or frame) when you change the project tempo. When the track time format is Beats-based, clips remain at the same beat position (the same measure, beat, and beat division) when you change the project tempo.

When you set a track to Beats-based time format, a metronome appears in the corner of the track icon.

To change a track's time format:

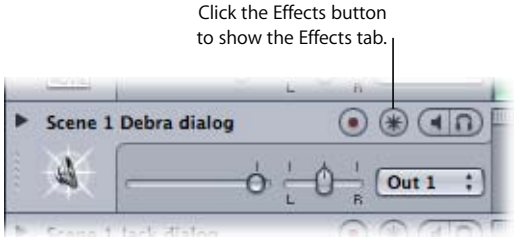
1. Select the track.
2. Choose Multitrack > Track Time Base, then choose a format from the submenu.

Adding Effects to a Track, Bus, or Output

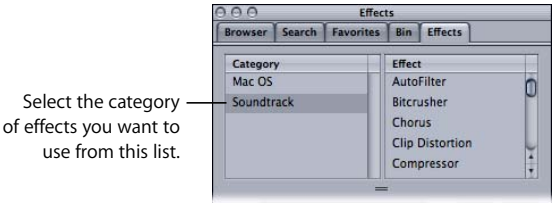
Clicking the Effects button in the header for a track, bus, or output displays the Effects tab, which you use to add effects. The Effects tab also displays any effects currently assigned to the track, bus, or output.

To add effects to a track, bus, or output:

1 Click the Effects button in the header for the track, bus, or output.

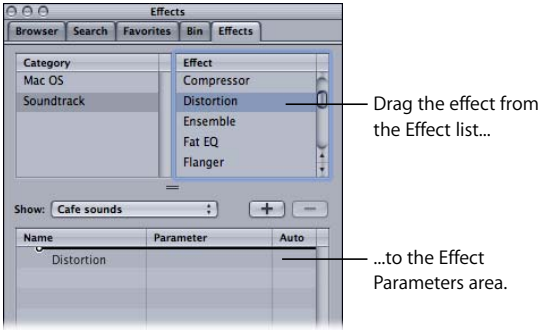


2 In the Effects tab, select a category in the Category list to display the effects for that category in the Effect list.



3 In the Effect list, do one of the following:

- Double-click the effect you want to add.
- Select the effect name, then click the Add Effect button.
- Drag the effect to the Effect Parameters area.



The effect now appears in the Effect Parameters area with its checkbox selected.

When you add effects to a track, bus, or output, the Effects button changes color to indicate that the track, bus, or output contains effects.

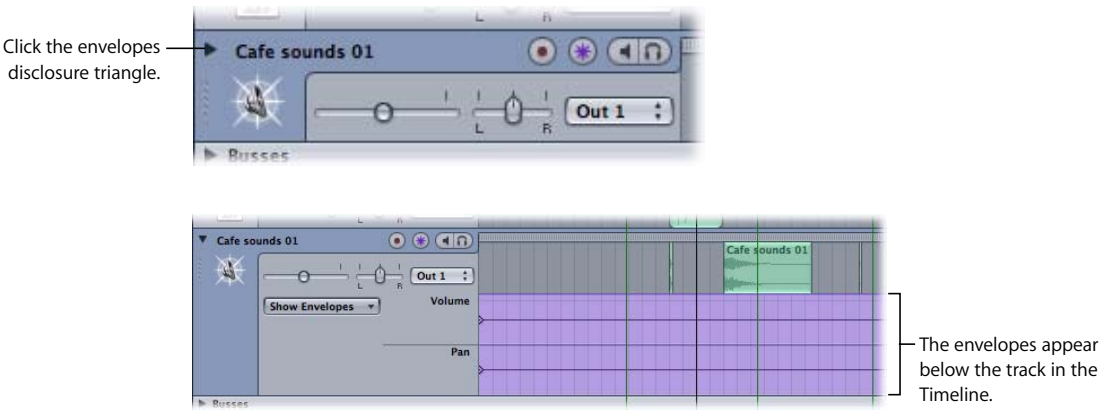
For detailed information about adding and adjusting effects, see Chapter 8, "Working with Audio Effects," on page 125.

Showing and Hiding Track, Bus, and Output Envelopes

Clicking the automation disclosure triangle for a track or bus shows the volume and pan envelopes, which you can use to automate changes to pan position and volume level over the course of the project. Clicking the triangle for an output shows the output's volume envelope. The envelopes appear in the Timeline below the track, bus, or output. You can also add envelopes for effect parameters, which appear below the other envelopes. For information on adding envelopes for effect parameters, see Chapter 8, "Working with Audio Effects," on page 125.

To show the envelopes for a track, bus, or output:

- Click the envelopes disclosure triangle in the header for a track, bus, or output. Click the disclosure triangle again to hide the envelopes.



Note: If you automate controls or effects using envelopes, you hear the results whether or not the envelopes are visible.

For information on automating changes to volume, pan, and other settings, see Chapter 9, "Working with Automation," on page 143.

Removing Tracks, Busses, and Outputs

You can remove a track, bus, or output if you decide you no longer want it in a project.

To remove a track, bus, or output, do one of the following:

- Select the track, bus, or output, then choose Multitrack > Remove [*item*] (or press Command-Shift-T).
- Control-click in the track, bus, or output, then choose Remove [*item*] from the shortcut menu.

The [*item*] changes depending on whether a track, bus, or output is selected.

Editing Audio Clips

You can edit audio clips in a variety of ways in the Timeline. You can select, cut, copy, and paste clips, move, resize, transpose, split, and join them, and edit them in other ways.

Selecting Audio Clips

You select the audio clips you want to edit. You can select a single clip or multiple clips, including clips in different tracks. When you select a clip, it appears darker than unselected clips.

To select an audio clip:

- Click the clip in the Timeline.

To select multiple audio clips in the same track, do one of the following:

- Command-click the clips in the Timeline.
- Drag from a point in the track before the first clip you want to select to a point after the last clip you want to select, encompassing the clips.
- If the clips are adjacent, Shift-click the clips in the Timeline.

To select multiple audio clips in different tracks:

- Shift-click or Command-click the clips in the Timeline.

To select all clips using the same source audio file, do one of the following:

- Select the clip in the Timeline or the Bin tab, then choose Clip > "Select All Occurrences of [*filename*]."
- Control-click the source audio file in the Bin tab, then choose "Select All Occurrences of [*filename*]" from the shortcut menu.

Cutting, Copying, and Pasting Audio Clips

You can cut, copy, and paste audio clips in the Timeline. You can also paste multiple copies of a clip.

To cut an audio clip:

- Select the clip in the Timeline, then choose Edit > Cut (or press Command-X).

The clip is removed from the Timeline and placed on the Clipboard.

To copy an audio clip, do one of the following:

- Select the clip in the Timeline, then choose Edit > Copy (or press Command-C).
- Option-drag the clip to the position where you want to copy it.

To paste an audio clip:

- Set the playhead at the position where you want to paste the clip, then choose Edit > Paste (or press Command-V).

The clip is pasted in the currently selected track, starting at the current playhead position. If no track is selected, the clip is pasted in the first (top) track.

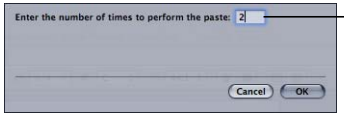
When pasting clips cut or copied from different positions in the Timeline or from multiple tracks, the following conditions apply:

- *Pasting clips from different Timeline positions:* The clip closest to the beginning of the project is pasted at the current playhead position, and the remaining clips are pasted at the same positions in time relative to the first clip as when they were cut or copied.
- *Pasting clips from multiple tracks:* The clip from the topmost track is pasted in the currently selected track, and the remaining clips are pasted at the same positions relative to the first clip as when they were cut or copied. If there are not enough tracks to accommodate the clips being pasted, a dialog appears asking if you want to create new tracks for the clips. If you choose not to create new tracks, only the clips for which tracks already exist are pasted.

When pasting audio clips, you can choose to paste multiple copies of the clip in succession. Using the Paste Repeat command, you can paste any number of copies of a clip in the selected track.

To paste multiple copies of a clip:

1. Cut or copy the clip.
2. Set the playhead to the point you want to paste the first copy of the clip.
3. If you want to paste the copies in a different track, select the track.
4. Choose Edit > Paste Repeat (or press Option-Command-V).
5. In the Paste Repeat dialog, enter the number of times you want to paste the clip.



Type the number of times you want to paste the clip in the Paste Repeat dialog.

The copies are pasted in the selected track, starting at the current playhead position. If no track is selected, the copies are pasted in the first (top) track.

The copies are pasted in the selected track, starting at the current playhead position.

Moving Audio Clips

You can move an audio clip in the Timeline by dragging the clip to a new position. You can also move the clip to a different track.

To move an audio clip to a new time position:

- Drag the clip left or right to a new position in the Timeline.

Drag a clip up or down to move it to a different track.

Drag a clip left or right to move it to a new position.

To move an audio clip to a new track:

- Drag the clip up or down to a different track.

You can also move an audio clip using the Left and Right Arrow keys with various modifier keys. Moving a clip by a small increment of time is called *nudging*.

To nudge an audio clip by one pixel:

- Hold down the Option key while you press the Left or Right Arrow key.

To nudge an audio clip to the next gridline:

- Hold down the Option and Shift keys while you press the Left or Right Arrow key.

When you nudge a clip by one pixel, the amount the clip moves in time depends on the current zoom setting.

Snapping Clips to Clips on Adjacent Tracks

If snap is turned on, you can snap a clip to the edges of a clip in an adjacent track (the track either directly above or directly below the track containing the clip). This is especially useful when the start and end points of clips do not fall on the current Snap To value.

To snap a clip to adjacent clips:

- Choose View > Snap To > Adjacent Tracks.

Resizing Audio Clips

You control the duration of an audio clip (the amount of time the clip plays back) by resizing the clip. When you add a clip to the Timeline, the clip has the same duration as the source audio file. You can shorten clips to play back only a part of the source file. When you lengthen a clip with looping playback mode, it repeats the source file multiple times.

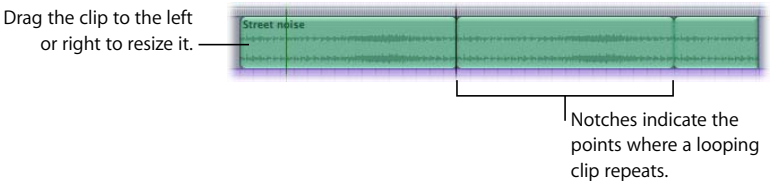
To resize an audio clip:

1. Place the pointer at either the left or right edge of the audio clip.

   The pointer changes to a Clip Resize pointer.

2. Click the edge of the clip and drag left or right to resize it.

When you lengthen a clip with looping playback mode, the notches at the top and bottom of the clip indicate the end of each repetition of the source audio file.



When you resize a clip by shortening its left edge, you change the point in the source audio file at which the clip starts playing, making the earlier part of the source audio inaudible. When you resize a clip by shortening its right edge, the part you shorten becomes inaudible. You cannot lengthen the left edge of a clip with non-looping playback mode beyond the beginning of the source audio file.

When you resize a clip, the edge being resized jumps to the nearest Snap To position if snap is turned on. If you want to resize the clip independently of the Snap To value, change the Snap To value or turn off snap before you resize the clip. For information about snap, see "Using Snap" on page 70.

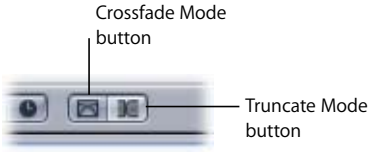
Creating Crossfades Between Audio Clips

Soundtrack lets you easily create crossfades between two audio clips in the Timeline. *Crossfades* let you create smooth transitions between one audio clip and the next, and avoid clicks or sudden changes in loudness that can result when placing audio files one after another.

To create a crossfade between audio clips, you set the project to crossfade mode, then drag an audio clip so that it overlaps another clip. A crossfade is created for the length of the overlapped area.

To set the project to crossfade mode:

- Click the Crossfade Mode button, located above the Global Timeline view.

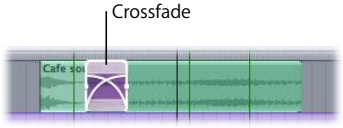


In crossfade mode, when you drag an audio clip so that it partially overlaps another audio clip in a track in the Timeline, a crossfade is created for the overlapped part of the two audio files. You can adjust the boundaries of the crossfade in the Timeline.

To create a crossfade:

- In the Timeline, drag an audio clip so that it overlaps another audio clip.

The crossfade appears in the overlapped area of the two clips.



You can adjust crossfades in several ways. You can change the edges of the crossfaded clips or move the position of the crossfade without changing its length.

To adjust crossfade boundaries:

1. Move the pointer over the left or right edge of the crossfade.

   The pointer becomes a crossfade pointer.

2. Drag the edge of the crossfade to adjust the crossfade boundary.

To move the crossfade without changing its length:

- Drag the lower area of the crossfade left or right.

As with other edits you make in the Timeline, creating a crossfade between two audio clips does not change the source audio files.

Truncating Overlapping Audio Clips

You can have Soundtrack truncate the overlapping part of audio clips in the Timeline instead of crossfading them. To truncate audio clips, you set the project to truncate mode, then drag an audio clip so that it overlaps another clip.

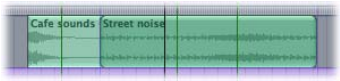
To set the project to truncate mode:

- Click the Overlap Mode button, located above the Global Timeline view.

In truncate mode, when you drag an audio clip so that it partially overlaps another audio clip in a track in the Timeline, the overlapped part of the clip is truncated.

To truncate an audio clip:

- In the Timeline, drag another audio clip over part of the clip.



Splitting and Joining Audio Clips

You may want to use only part of the source audio file in an audio clip. Soundtrack lets you split the clip into segments and use the segments in the Timeline as independent clips. You can move the segments, edit them, and split each one into additional segments.

There are two ways to split clips: using the Split (razor) tool, or using the Split menu item in the Edit menu with the playhead. Each method has advantages, depending on the situation. Using the Split tool, you can perform many splits consecutively without moving the playhead each time. Using the playhead, you can split clips in several tracks at once.

To split audio clips with the Split tool:

1. Click the Split Tool (also called the Razor) button above the Timeline.

2. Click a clip at the point where you want to split it.

To split audio clips with the playhead:

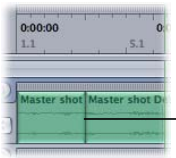
1 Set the playhead at the point where you want to split the clip, then select the clip or clips you want to split.

You can split multiple clips in the same operation.

Move the playhead to where you want to split the selected clip.

2 Choose Edit > Split (or press S).

Every selected clip under the playhead is split into two segments. The first segment ends at the playhead position, and the second segment begins at the playhead position.



The clip is split into two segments, each of which plays part of the source audio file.

You can join clips from the same original audio file, including segments of split clips. Clips being joined must be adjacent to each other and in the same track.

To join audio clips:

1 Place the clips next to each other in the same track.

2 Select the clips, then choose Edit > Join (or press J).

When you join looping files or segments of looping files, the joined file plays to the end of the source audio file before looping. The notches in the joined file indicate the end of the source audio file.

Transposing Tagged Audio Clips

When you drag an audio file tagged with key information to the Timeline, Soundtrack transposes the clip to the project key. You can transpose tagged clips to another key to create chord progressions from the same audio file or to achieve other musical effects. You can transpose a tagged clip to any interval from one octave above (+12 semitones) to one octave below (–12 semitones) its current key.

Note: Soundtrack uses the key tag in the audio file to transpose it. In order to be correctly transposed, the file must be tagged.

To transpose a tagged audio clip, do one of the following:

- Select the clip, choose Clip > Transpose, then choose the number of semitones by which you want to transpose the clip up or down.
- Control-click the clip in the Timeline, choose Transpose from the shortcut menu, then choose the number of semitones by which you want to transpose the clip up or down.

When Soundtrack matches audio clips to the project key, it transposes the clips using the smallest appropriate interval. For instance, when matching a clip recorded in the key of D with a project in the key of A, the clip is transposed down five semitones (–5) rather than being transposed up seven semitones (+7), although either transposition would put the clip in the project key.

Transposing clips can lead to undesirable results, such as when the sound of the instrument recorded in the clip is moved outside its natural range. If the sound of a clip changes in an unsatisfactory way, you can try transposing the clip up or down by an octave (12 semitones) and see if you like the result better.

The following table shows the correspondence between semitones and musical intervals for transposing clips:

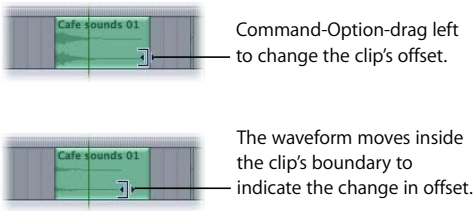
Number of semitones (+/–)	Musical interval
1	Minor second
2	Major second
3	Minor third
4	Major third
5	Perfect fourth
6	Tritone (diminished fifth)
7	Perfect fifth
8	Minor sixth
9	Major sixth
10	Minor seventh
11	Major seventh
12	Octave

Changing the Offset of an Audio Clip

When you add an audio clip to the Timeline, the clip plays back from the beginning of the source audio file. The point in the audio file where the clip starts playing is called the *offset*. By default, a clip's offset is zero, the beginning of the source audio file. You can change the offset so that the clip starts playing from a later point in the source audio file. This allows you to use the audio from a later part of the source file without splitting the clip.

To change the offset of a clip:

- Select the clip, then Command-Option-drag left (toward the beginning of the project).


Cafe sounds 01
Command-Option-drag left to change the clip's offset.
Cafe sounds 01
The waveform moves inside the clip's boundary to indicate the change in offset.

Once you have changed the offset by dragging to the left, you can also drag to the right to change the offset.

Note: You can only drag the offset to a later part of the clip's source audio file, not to a point before the beginning of the file.

When you change the offset of a clip, the waveform moves inside the clip's boundary to indicate the change in offset. The length of the clip stays the same. If the clip has not been resized, it will reach the end of the source audio file and start looping. As you move the offset by dragging, the clip's notches move to show the point at which the clip will start looping.

Changing a Clip's Playback Mode

Audio files you add to the Timeline can be either looping or non-looping. Looping files are special audio files that can be used to create repeating patterns, and include musical phrases useful for creating music beds. Audio files containing discrete, non-rhythmic sounds, sound effects, and other non-musical sounds such as dialogue or sound effects should be used as non-looping files in most cases.

When you add an audio file to the Timeline, the audio file is added as a clip with non-looping playback mode unless the audio file is tagged as a looping file. You can change the playback mode of a clip after you add it to the Timeline.

To convert the playback mode to looping, do one of the following:

- Select the clip, then choose Clip > Convert to Looping.
- Control-click the clip in the Timeline, then choose Convert to Looping from the shortcut menu.

To convert the playback mode to non-looping, do one of the following:

- Select the clip, then choose Clip > Convert to Non-Looping.
- Control-click the clip in the Timeline, then choose Convert to Non-looping from the shortcut menu.

Replacing the Source Audio in a Clip

Each audio clip in the Timeline has a set of properties specific to the clip, including duration, speed, and transposition. You can replace the source audio in the clip while preserving the clip's properties. This feature has a variety of uses, such as letting you try out similar audio files (for example, music beds or sound effects) while maintaining the clip's duration, position in the Timeline, and transposition.

For information about properties of audio clips, see "Reconnecting Media Files" on page 72.

To replace the source audio file for a clip:

1. In the Timeline, select the clip for which you want to replace the source audio.
2. Do one of the following:
   - In the Media and Effects Manager, select the audio file you want to replace the selected clip's audio with, then choose Clip > "Replace Selected Clips With [*filename*]."
   - In the Media and Effects Manager, Control-click the audio file you want to replace the selected clip's audio with, then choose "Replace Selected Clips With [*filename*]" from the shortcut menu.

When you replace the source audio in a clip, the clip's duration and offset stay the same. Only the portion of the new source audio file equal to the clip's length plays. If the new source audio file is shorter than the clip's length, the clip loops when it reaches the end of the new source audio file. Notches appear on the clip to indicate the point at which the clip starts looping.

You can replace the source audio in all clips using the same source audio file with another source audio file by using the Select All Occurrences and Replace Selected Loops commands together.

To replace the source audio file in all clips using the same source file:

1. Select all occurrences of the clip for which you want to replace the source audio file, following the steps described in "Selecting Audio Clips" on page 101.

   Every clip using the same source audio file is selected.

2. Replace the source audio file with another source audio file, following the steps described in "Replacing the Source Audio in a Clip" on page 110.

Removing Audio Clips

As you work on a project, you may decide that a clip that sounded great on its own no longer fits with the overall composition. You can remove clips from a project by deleting them from the Timeline.

To remove an audio clip:

- Select the clip, then choose Edit > Delete (or press the Delete key).

Working with Markers

Markers have a variety of uses in the Timeline. For example, you can use markers to:

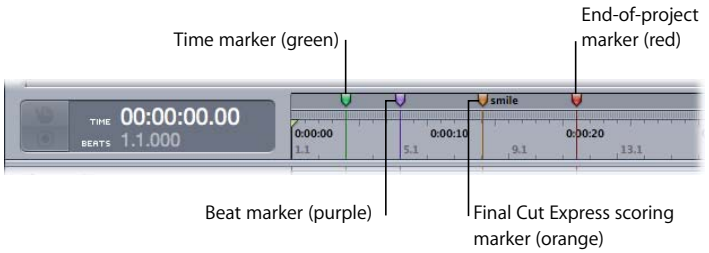
- Mark the start and end points of major sections in your project
- Indicate places you want to come back to and work on later
- Mark points where you want to synchronize the audio with the picture in a video
- Indicate where particular sounds begin and end in an audio file

Markers extend vertically through the Timeline, like the playhead. Each marker has a handle in the area above the Time ruler, letting you position the marker precisely in the Timeline.

Types of Markers

Soundtrack displays Final Cut Express scoring markers, and lets you add your own markers to a project. You can add two kinds of markers: time markers and beat markers. The two types can be distinguished by their handles: Time markers have green handles, and beat markers have purple handles. Final Cut Express scoring markers have orange handles.

This section discusses how to work with time markers and beat markers in a project. For information about working with Final Cut Express scoring markers, see "Using Final Cut Express Scoring Markers" on page 121.



Inserting Markers

You can insert a beat marker or time marker at any point in the Timeline.

To insert a beat marker:

- Set the playhead to the point where you want to add the marker, then choose Project > Insert Beat Marker (or press Option-B).

To insert a time marker:

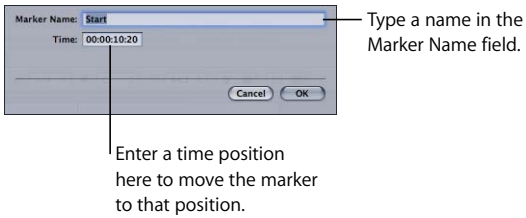
- Set the playhead to the point where you want to add the marker, then choose Project > Insert Time Marker (or press the M key).

Naming Markers

You can name time markers and beat markers, so that each marker can provide a unique visual cue to a specific point in the Timeline. For example, you can name markers to define sections of your project (Introduction, Verse, or Chorus), to reflect what's happening in the music (Latin Rhythm or Fast Groove), or to serve as reminders for your workflow (Add Horns Here, Transpose to D, Insert Delay Effect).

To name a beat marker or time marker, do one of the following:

- Control-click the marker handle, choose Edit from the shortcut menu, type a name in the Marker Name field of the dialog that appears, then click OK.
- Make the Details tab active, select the marker, then type a name in the Name field of the Details tab.


Marker Name: Start
Time: 00:00:10:20
Cancel
OK
Type a name in the Marker Name field.
Enter a time position here to move the marker to that position.

To view marker titles in the Timeline:

- Choose View > Show Marker Titles, or double-click a marker handle.

Moving Markers

You can move a marker either by dragging the marker's handle, or by entering a new position for the marker in an Edit dialog.

To move either a beat marker or time marker, do one of the following:

- Drag the marker by its handle, located in the area above the Time ruler, to a new position in the Timeline.
- Show the Details tab, click the marker you want to move, then enter a new position in the Position field.
- Control-click the marker handle, choose Edit from the shortcut menu, then type a new position in the Time field.

You can also select and drag multiple markers. When you move a marker by dragging, the marker's position snaps to the nearest Snap To position if snap is turned on. For information on setting the Snap To value, see "Creating Crossfades Between Audio Clips" on page 105.

Deleting Markers

To delete a marker:

- Click the marker handle to select the marker, then choose Edit > Delete (or press Delete).

You can't delete Final Cut Express scoring markers in Soundtrack.

Working with Video in Soundtrack 7

You can import a video into a project, view the video as you work on your project, edit the video's audio, and use markers to synchronize audio and video.

When you import a video, the video appears in the Video tab of the Utility window, and a video clip appears in the video track in the Timeline. The video's audio appears as a clip in an audio track in the Timeline, and can be moved and edited like other audio clips. You can mute, solo, and adjust the volume and pan of the video's audio, add effects, and automate changes.

When you import a video from Final Cut Express, you can set the Time ruler units to match the timecode format of the video. Any Final Cut Express scoring markers contained in the video appear as markers in the Timeline. You can also add markers in Soundtrack and export them to Final Cut Express with the video file. You can score markers to the playhead, using them to synchronize your soundtrack to the action in the video.

You can work with video in Soundtrack in several ways. You can add audio clips for dialogue and voiceover, music, ambience, and sound effects to the Timeline. You can make roundtrips between Final Cut Express and Soundtrack as you work on both the video and the soundtrack, or bring the final video into Soundtrack to finalize the project. When your soundtrack is complete, you can export it as an AIFF file or export to QuickTime.

Supported Video File Formats

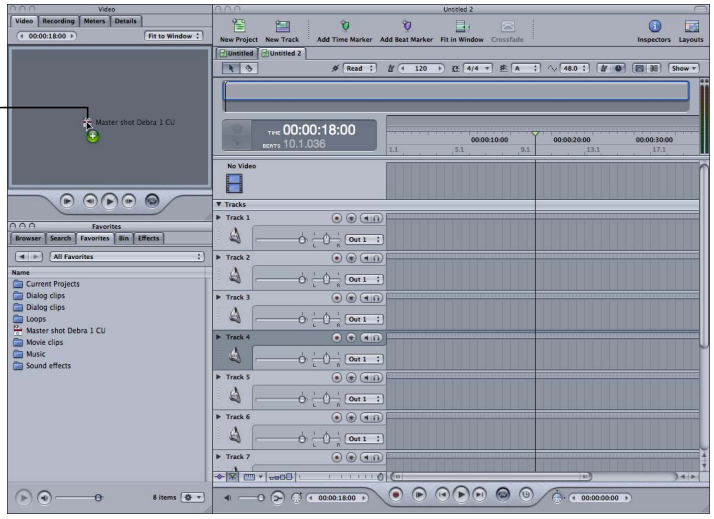
Soundtrack supports standard QuickTime-compatible file formats. You can import a QuickTime movie (.mov) video file into a Soundtrack project, and can import an MPEG-2 (.m2v) if you have installed the QuickTime MPEG-2 Playback Component. Video files using NTSC, PAL, HD, and other formats supported by QuickTime can be imported into Soundtrack. Imported video files can be up to four hours in length.

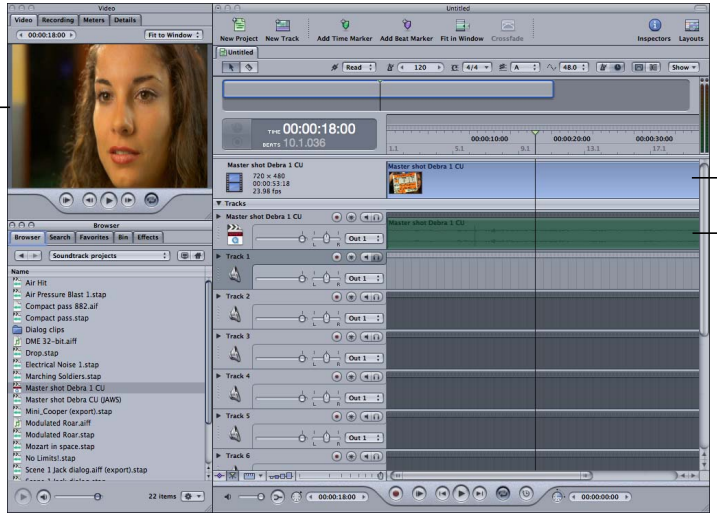
Adding a Video to a Project

You can import a video file by dragging the file from the Media and Effects Manager or from the Finder. You can import only one video file into a project.

To import a video file into a project, do one of the following:

- Drag the video file from the Media and Effects Manager or the Finder to the Video tab of the Utility window.
- Drag the video file from the Media and Effects Manager or the Finder to the video track in the Timeline.





The video is displayed in the Video tab in its correct aspect ratio, and a video clip appears in the video track (the top track in the Timeline), letting you see the duration of the video in the project. The video clip starts at the beginning of the project and cannot be moved to another point in time. Any Final Cut Express scoring markers included in the video file appear in the Timeline with an orange handle.

If the video contains audio, new audio tracks are added below the video track for each audio track in the movie, and the video's audio tracks appear as audio clips in the new tracks. You can move, resize, and edit these audio clips like any audio clip in the Timeline, and can use the track controls to control volume and pan, mute or solo the track, and add effects or automation.

Playing the Video

When you play the project, the video plays in time with the audio in your project. You can also control playback of the video and the project using the video transport controls in the Video tab, or using keyboard shortcuts.

- *Play from Beginning:* Starts playback from the beginning of the video.
- *Previous Frame:* Moves the video back one frame.
- *Play:* Plays the video from the current playhead position.
- *Next Frame:* Moves the video forward one frame.
- *Cycle:* Activates the playback region, if one is set in the Time ruler.

To view the video, you can make the Video tab active or detach it from the Utility window and move it to another location onscreen.

Controlling Video Playback Using Keyboard Shortcuts

There are a number of keyboard shortcuts you can use to control playback of the video in the Video tab. To use keyboard shortcuts, the pointer cannot be in a text field.

- *Space bar:* Plays the video from the current playhead position. This is equivalent to clicking the Play button.
- *Return:* Sets the playhead to the beginning of the video. If the playback region is active, pressing Return sets the playhead to the beginning of the playback region. This is equivalent to clicking the Go to Beginning button in the transport controls.
- *Command-Left arrow:* Moves the video back (closer to the beginning) one frame. This is equivalent to clicking the Previous Frame button.
- *Command-Right arrow:* Moves the video forward (closer to the end) one frame. This is equivalent to clicking the Previous Frame button.

For a complete list of Soundtrack keyboard shortcuts, see Appendix B, "Soundtrack Keyboard Shortcuts," on page 189.

Resizing the Video Tab

You can resize the Video tab (to any size, up to filling your entire screen), and can detach the Video tab.

To resize the Video tab, do one of the following:

- Drag the Resize handle at the lower-right corner of the Video tab until the tab is the size you want.
- Drag the edge of the Video tab to resize it along with the other windows.
- Click the Resize button at the upper left of the Utility window while the Video tab is active. The Video tab resizes to fill the screen.

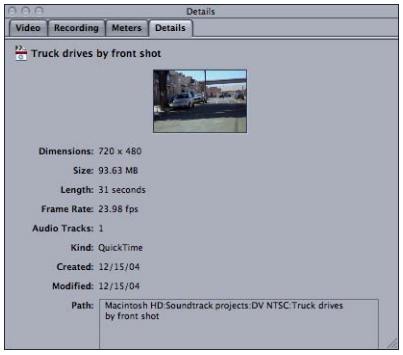
Viewing Video Details

You can view details of a video file, including the video file's name, dimensions, length, frame rate, and other information. You can view details of a video file that has been added to a project, or a video file in the Media and Effects Manager.

To view details of a video file:

1. If the Details tab is not visible, click Details to make it active.
2. Select the video file in the Media and Effects Manager, or select the video clip in the Timeline.

   The video file's information appears in the Details tab.



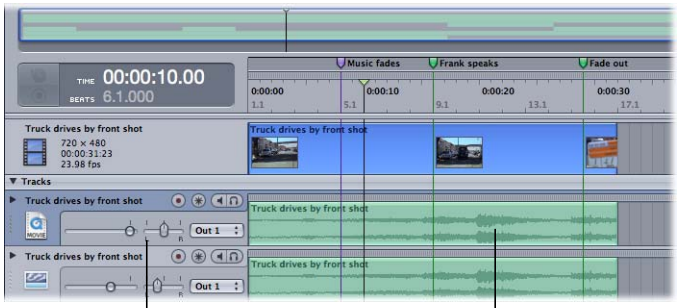
You can preview a video file in the Details tab before you add it to a project.

To preview a video file in the Details tab:

1. If the Details tab is not visible, click the Details button to make it active.
2. In the Media and Effects Manager, select the video file you want to preview.
3. In the Preview controls at the bottom of the window, click Play.

Working with a Video's Audio

You can edit the audio clip of the video's audio as with any audio clip in the project. You can move and resize the video's audio, or split and join it. You can also change the name or icon of the track containing the video's audio, and use the controls in the track header to adjust volume and pan, mute or solo the track, change the time format, or enable the track for recording.



You can adjust the video's audio using the controls in the track's header.

The video's audio track

If you remove the video from the project, the audio clip of the video's audio is not deleted, but remains in the project. You can delete the clip separately if you want to remove it.

Using the Time Display and Time Ruler with Video

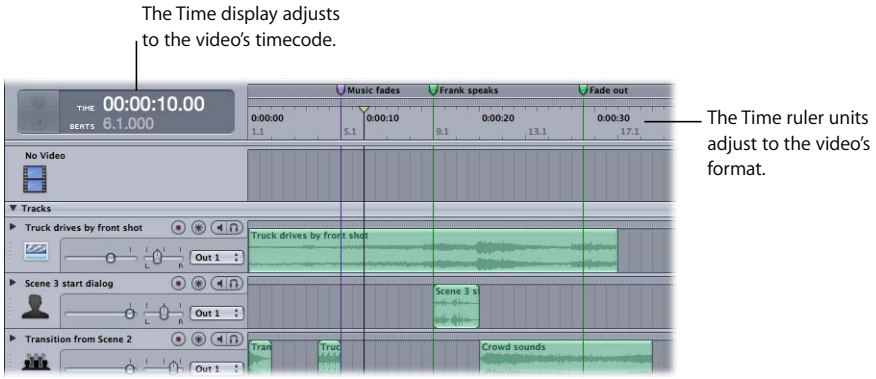
When you import a video file into a Soundtrack project, the Time display and Time ruler adjust to show the timecode format of the video. The Time display and Time ruler can display time in seconds, frames, drop frames, or non-drop frames. You can choose the format for timecode display, and can set the video frame rate for projects not containing a video file. You can also set the default frame rate for new projects in the Project Preferences pane.

To choose the units shown in the Time display and Time ruler:

- Choose View > Time Ruler Units, then choose a time format from the submenu.

To choose the video frame rate for projects not containing a video file:

1. Choose View > Time Ruler Units > Set Video Frame Rate.
2. In the dialog that appears, choose a frame rate from the Frame Rate pop-up menu.



For more information on the Time ruler, see "Using the Time Ruler" on page 92.

Using Markers with Video

Soundtrack displays Final Cut Express scoring markers included in a video file imported from Final Cut Express. You can add time markers at points in time corresponding to specific timecode positions in the video clip, and align audio clips with markers using the snap feature. When you add a marker to a project containing a video, the video clip displays the frame of the video that occurs at the marker's position in time.

For more information about adding and moving markers, see "Working with Markers" on page 111.

You can score both Final Cut Express scoring markers and time markers to the playhead, letting you synchronize the audio with specific points in the video.

Using Final Cut Express Scoring Markers

When you import a video file from Final Cut Express or Final Cut Express HD, Soundtrack displays any Final Cut Express scoring markers included in the video file in the Timeline. Scoring markers have an orange handle in the area above the Time ruler. You cannot move or edit Final Cut Express scoring markers in Soundtrack.

Using Markers to Align Audio Clips to Timecode

You can add a time marker at a specific timecode position in a video clip, and align audio clips with the time marker or with a Final Cut Express scoring marker.

To add a time marker at a specific timecode position in a video clip, do one of the following:

- Type the timecode position where you want to add the marker in the Time display, press Return, then choose Mark > Insert Time Marker (or press M).
- Add a time marker, Control-click the marker's handle, then type the timecode position in the Edit dialog.
- Make the Details tab active, add a time marker, select the marker handle, then enter a new position in the Position value slider in the Details tab.

  To add a marker at a specific timecode position, the Time ruler units must be set to the timecode format of the video in your project.

To align an audio clip with a marker:

- Make sure that snap is turned on and that Markers is selected in the View > Snap to menu, then drag the clip to the position of the marker in the Timeline.

With Markers selected, you can align a clip with a marker.

Scoring a Marker to the Playhead

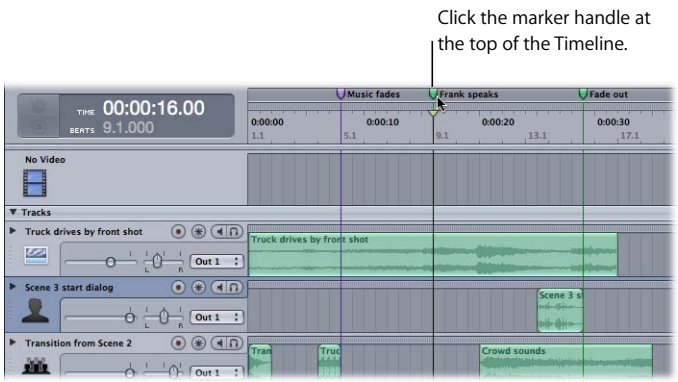
For tracks set to Beats-based time format, you can score a time marker or Final Cut Express scoring marker to the playhead, so that you can synchronize the audio with the video. Scoring a marker to the playhead adjusts the tempo so that the required number of beats exactly fills the amount of time between the last tempo change and the marker's position in the Time ruler.

When you score a marker to the playhead, a set of special envelope points is created in the project's tempo envelope, from the previous envelope point (or the beginning of the tempo envelope, if no previous envelope point exists) to the position of the marker. These special envelope points are locked and cannot be moved (but can be deleted). The locked envelope points, and the segment of the tempo envelope between them, appear red.

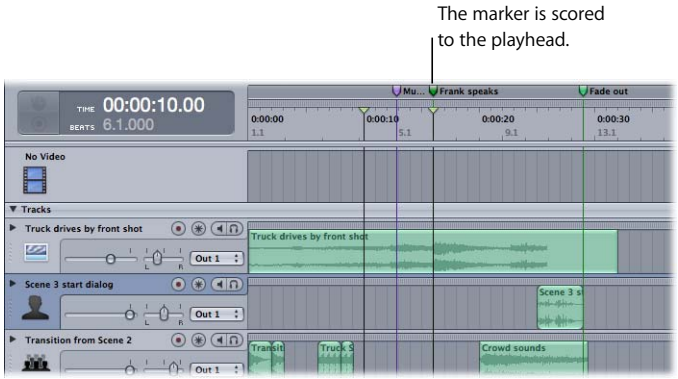
The tempo change created when you score a marker to the playhead is always instantaneous; that is, the tempo changes from the previous tempo immediately, without ramping. The distance between the two envelope points determines whether the resulting tempo change can be heard easily. If the resulting change in tempo sounds too abrupt, you can edit the tempo envelope to make the tempo change less noticeable.

To score a marker to the playhead:

1 Select the marker's handle at the top of the Timeline, above the Time ruler.



2 Choose Mark > Score Marker to Playhead.



You can also adjust the tempo relative to a marker's position by Option-dragging the marker in the Timeline. As you drag, the red segment of the tempo envelope moves vertically as the tempo changes. By Option-dragging a marker, you can synchronize the marker's position with the Beats-based units.

Note: If you score a marker to the playhead, and the tempo change resulting from the scoring operation sounds too noticeable or extreme, you can undo the scoring operation. After undoing the scoring operation, add an envelope point to the tempo envelope at a point after any audio clips you do not want to be affected by the tempo change, but before the marker to be scored, then repeat the scoring operation.

Removing a Video from a Project

You can remove a video if you decide you no longer want to use it in the project.

To remove a video clip from a project, do one of the following:

- Select the video clip in the Timeline, then choose Edit > Delete (or press the Delete key).
- Control-click the video clip, then choose Remove Video from the shortcut menu.

When you remove the video from a project, the audio clip of the video's audio is not deleted, but remains in the project. You can delete the clip separately if you want to remove it.

Working with Audio Effects

8

You can modify the sound of your project in many ways using audio effects. Soundtrack includes a complete set of professional-quality audio effects you can use in your projects.

You can use audio effects to add both subtle and dramatic changes to audio clips in a project. Soundtrack includes effects for equalization, compression, reverb, and other effects you can use to enhance the sound of your audio. You can also use third-party Audio Units effects plug-ins in projects.

All effects you add to a project are realtime effects. You can add effects to tracks, busses, and outputs. Realtime effects modify the audio as it passes through them, so you hear any changes you make, or any new audio you add, through the sound of the effect. Each effect has effect parameters you can adjust to control how the effect modifies the audio. You can also automate effect parameters to create changes over time.

You can create *effects chains* on a track, bus, output, or audio file. An effects chain is a series of effects that modify the audio in a set order. Using busses in the Timeline, you can create submixes, and apply the effect to all the tracks in a submix with one set of controls.

For information about working with effects in Soundtrack projects, see "Working with Effects" on page 134.

Audio Effects Included with Soundtrack

Soundtrack includes the following types of audio effects:

- *Dynamics:* Dynamics effects let you shape the volume of your projects over time. Bundled dynamics effects include Compressor and Noise Gate.
- *Distortion:* Distortion effects change the tone of the audio signal to recreate the sound of overdriven tube amplifiers or digital distortion. Bundled distortion effects include Bitcrusher, Clip Distortion, Distortion, Overdrive, and Phase Distortion.
- *EQ and Filter:* EQ (short for equalization) effects let you change the level of selected frequencies. EQ provides a powerful way of shaping the sound of your projects. Bundled EQ effects include Fat EQ.
- *Modulation:* Modulation effects delay an audio signal and shift (*modulate*) when the delayed signal plays back relative to the original signal. Bundled modulation effects include Chorus, Ensemble, Flanger, Modulation Delay, Phaser, and Tremolo.
- *Reverb and Delay:* Reverb effects can be used to simulate the sound of acoustic spaces, both realistic and unnatural. Delay effects can be used to add echoes and other recurring sounds. Bundled reverb and delay effects include PlatinumVerb, Stereo Delay, Soundtrack Pro Reverb, and Tape Delay.
- *Miscellaneous:* Miscellaneous effects fall outside the other categories, providing additional ways to modify your audio. Bundled miscellaneous effects include Autofilter, Soundtrack Pro Autofilter, and SubBass.

There are additional Mac OS effects in each category, available in the Effects pane, that you can use with Soundtrack. The following descriptions apply to Soundtrack, Mac OS, and third-party effects.

Dynamics Effects

Dynamics effects let you adjust the dynamic range (the range between the softest and loudest sounds) of your projects. You can use dynamics effects to make sounds more focused and to optimize the sound for specific playback situations. Dynamics effects include compressors, limiters, and noise gates.

Compressors

Compressors work like an automatic volume control, lowering the volume whenever it rises above a certain level, called the *threshold*. But why would you want to reduce the dynamic level? By cutting the peak levels, the compressor lets you raise the overall volume of the signal. This gives the sound more focus by making the foreground parts stand out while preventing the background parts from becoming lost in the mix. Compression also tends to make sounds tighter or "punchier." Because the peaks are lower, the maximum volume is reached more quickly.

In addition, a compressor can make a project sound better when played back in different situations. For example, the speakers on a television set or in a car sound system typically reproduce a narrower dynamic range than does the sound system in a theater. Compressing the overall mix can help make the sound reproduce more clearly in lower-fidelity situations.

Compressors have two main parameters. The threshold lets you set the amplitude above which the compressor lowers the volume. The *ratio* lets you control the amount by which sounds above the threshold will be lowered, as a percentage of the original signal.

For example, if you set the threshold to –12 dB, and the ratio to 2:1, a sound at –7 dB (5 dB above the threshold) is reduced by 2.5 dB, and a sound at –2 dB (10 dB above the threshold) is reduced by 5 dB.

Compressors can also include parameters for *attack* and *release*. These parameters let you set how quickly the compressor reacts once the threshold is reached (for attack) or once the signal falls below the threshold again (for release). Use these parameters to make the compressor's effect more subtle or more pronounced. Another parameter on some compressors is the *knee* (or *soft knee*), which lets you control how gradually the compressor transitions between no compression and the compression ratio at the threshold.

Compressors are typically used on vocal tracks to make the vocals prominent in the overall mix. They can also be used on music and sound effects tracks, but rarely on ambience tracks.

Limiters

Limiters (also called *peak limiters*) prevent the audio signal from exceeding a maximum volume level. A compressor gradually attenuates levels above the threshold, but a limiter puts a hard limit on any signal louder than the threshold. You use a limiter mainly to prevent clipping.

Noise Gates

A noise gate alters the signal in the opposite direction from a compressor. While a compressor lowers the volume of sounds above the threshold, a noise gate lowers the sounds below the threshold. Loud signals pass through unchanged, but softer signals, such as the decay of a loud instrument, are cut off. Noise gates can be used to eliminate low-level noise or hum from an audio signal.

Distortion Effects

Distortion effects simulate the sound of analog and digital distortion. After working to eliminate the digital distortion caused by clipping from a project, why would you add distortion as an effect? The distortion produced by overdriven vacuum tubes (which were used in amplifiers and music recording equipment before the development of digital recording technology) produces an effect which many people find pleasing, and which is integral to many styles of popular music. Analog tube distortion adds a distinctive warmth and bite to the signal.

There are also distortion effects that intentionally cause clipping and digital distortion of the signal. These can be used to modify vocal, music, and other tracks to produce an intense, unnatural effect, or for creating sound effects.

Distortion effects include parameters for *tone,* which let you shape the way in which the distortion alters the signal, and for *gain,* which let you control how much the distortion increases the output level of the signal.

EQ and Filter Effects

EQ is likely the most common audio effect used in postproduction. You can use EQ to shape the sound of a project by adjusting specific frequencies or frequency ranges. Using EQ, you can create both subtle and extreme changes to the sound of your projects.

Most EQ effects make use of filters. As the name suggests, a filter allows certain frequencies to "pass through" to the output while stopping or attenuating other frequencies. EQ effects include highpass, lowpass, and band pass filters.

When the audio signal passes through an EQ filter, the frequencies that pass through can be raised or lowered in volume. Raising and lowering frequencies using EQ is often referred to as *boosting* and *cutting* frequencies. You can create many changes to the sound of your project by boosting and cutting various frequencies.

Frequency Ranges Used with EQ

All musical sounds can be categorized into one of three basic frequency ranges: bass, midrange, or high (also called treble). These can be further divided to include low bass, low and high midrange, and low and high highs. The following table describes some of the sounds affected by each range:

Name	Frequency range	Description
High High	8–20 kHz	Includes cymbal sounds and highest harmonics of instruments. Boosting frequencies in this range slightly can add sparkle and presence.
High	5–8 kHz	This range corresponds roughly to the treble tone control on a stereo. Boosting frequencies in this range can add brightness and shine.
Low High	2.5–5 kHz	Includes the higher harmonics of voices and musical instruments. This range is important for adding presence. Excessive boosting in this range can sound shrill or harsh.
High Midrange	1.2–2.5 kHz	Includes the consonants of voices and the high harmonics of musical instruments, especially brass instruments. Excessive boosting in this range can create a pinched, nasal sound.
Midrange	750 Hz–1.2 kHz	Includes the vowels of voices and the harmonics of musical instruments that create tone color.
Low Midrange	250–750 Hz	Includes the fundamentals and lower harmonics of voices and musical instruments; careful EQing of each can keep them from competing. Excessive boosting in this range can result in muddy and unclear audio; excessive cutting can produce thin-sounding audio.
Bass	50–250 Hz	Corresponds roughly to the bass tone control on a stereo. Includes the fundamental frequencies of voices and of musical instruments. Excessive boosting in this range can sound boomy and thick.
Low Bass	50 Hz and below	Also called *sub bass*. Very little of the sound of voices or musical instruments falls in this range. Many sound effects used in movies, such as explosions and earthquakes, fall in this range.

Note: The frequencies shown for each range are approximate. Any division of sound into frequency ranges is somewhat arbitrary, and is meant only to give a general indication of each range.

Roll-Off Filters

The simplest types of EQ effects are *roll-off filters,* which include lowpass, highpass, bandpass, and shelf filters. Lowpass filters affect all frequencies above a specific frequency, called the *cutoff frequency*. Frequencies above the cutoff are attenuated or "rolled off" gradually, usually by a fixed number of decibels per octave. Highpass filters, by contrast, affect all frequencies below their cutoff frequency. Bandpass filters exclude all frequencies close to their *center frequency*. You can set the center frequency, and also set the *bandwidth* or *Q,* which specifies how wide a range of frequencies around the center frequency are affected.

These EQs include parameters for setting the cutoff frequency. Shelf filters add parameters to control the *gain* (the amount of boost or cut). You can use roll-off filters as "broad brush" effects to boost or cut a large range of frequencies.

Graphic EQs

Graphic EQs give you a set of filters (often with 10 or 31 filters), each with a set center frequency and bandwidth. Using a graphic EQ, you can shape a wide variety of frequencies throughout the frequency range. Graphic EQs can be used to shape the sound of the overall project mix.

Parametric EQs

Parametric EQs are similar to bandpass EQs, but provide a greater amount of control, and can be used for extremely precise adjustments. With a parametric EQ, you can set the center frequency, the gain, and the bandwidth. Used carefully, a parametric EQ can help a track cut through the mix, or help a track or project sound fuller. Parametric EQs can also be used to remove specific, unwanted frequencies from a mix.

Modulation Effects

Modulation effects begin with a delayed signal, like time-based effects, but vary (or *modulate*) the delay time, typically using an LFO. This can be used to double a sound, making it seem stronger and "fatter," to simulate a group of voices or instruments playing together, or to add a distinctive character to the sound. Modulation effects include chorus, phase shifters, and flangers.

Chorus

Chorus effects play back multiple repetitions of the delayed signal (like reverbs), but vary the delay time for each one, using an LFO. As the name implies, this effect can strengthen the sound, and create the impression that the sound is being played by many instruments or voices in unison. The slight variations in delay time created by the LFO simulate the subtle differences in timing and pitch heard when several people play together. Using chorus also adds fullness or richness to the signal, and can add movement to low or sustained sounds.

Phase Shifters

Phase shifters produce a characteristic "whooshing" sound by combining the original signal with a copy of the signal that is slightly out of phase with the original. This means that the amplitudes of the two signals' sound waves reach their highest and lowest points at slightly different times. The time between the two signals is modulated, typically using an LFO. As the two signals go in and out of phase, certain frequencies, called *notch frequencies,* are created, which give phase shifters their distinctive sound.

The main difference between chorus and phase shifting is the amount of delay time. Chorus effects typically use delay times between 20 and 30 milliseconds (ms), while phase shifters (and flangers, discussed next) typically use shorter delay times, between 1 and 10 ms.

Flangers

Flangers work in much the same way as do phase shifters, but additionally change the pitch of the delayed signal slightly. Flanging is typically used to create a more extreme change than phase shifting, sometimes described as adding a "spacey" or "underwater" effect.

All of the modulation effects include parameters for the *delay rate* (also called *speed* or *frequency*), which let you set the minimum delay time; *depth* (also called *width* or *intensity*), which you use to set how much the LFO modulates the delay time; and *mix,* which you use to control the ratio of the effected (wet) signal to the original (dry) signal. They can also include parameters for *feedback* (or *regeneration*), which add part of the output back into the input signal.

Reverb and Delay Effects

Reverbs and delays work by copying a part of the audio signal, delaying it for a brief period of time, and then playing it back with the original signal. The delayed signal can be played back multiple times, and can be modified in a variety of ways.

Delay

A delay effect stores the audio signal, and then plays back each repetition at a regular rate of time after the original signal. Delays can be used for doubling individual sounds (for example, making it sound as if a group of instruments is playing the same melody), to achieve echo effects (making it sound as though the sound was occurring in an immense space), and to enhance the stereo position of tracks in a mix. Delay effects are not commonly used on an overall mix except to achieve special effects (such as to create an "otherworldly" sound).

Delay effects let you set the *delay time,* the time between the original signal and the delayed signal. Delays often provide parameters for *feedback* (also called *regeneration*), which let you set how much of the delayed signal is fed back into the delay's input, creating more repetitions of the delay (like the number of "bounces" in an echo). Specific types of delay have other parameters: Tap tempo delays let you set the delay time by physically tapping a key or controller; stereo delays include parameters for the pan position of the output signal, which can be shifted over time using a low-frequency oscillator (called an *LFO*).

Reverb

Reverberation, usually shortened to *reverb,* simulates the sound of acoustic environments such as rooms, concert halls, caverns, or the sound of infinite space. In any acoustic space, sounds echo off the surfaces of the space (the floor, walls, and ceiling) over and over, gradually dying out until they become inaudible. Reverb effects consist of thousands of delays, of varying lengths and intensities, that simulate these natural echoes. Reverb helps define the sense of space in which sounds take place, and can be used to simulate both realistic and fantastic acoustic environments.

The first form of reverb actually used a room with hard surfaces (called an *echo chamber*) to add echoes to the signal. Mechanical devices, including plates and springs, were also used to add reverberation to the output of instruments and microphones. Digital sound recording has made it possible to use digital reverbs, which use complex algorithms (sets of equations) to simulate various acoustic environments with greater accuracy and flexibility.

Simple reverb effects provide parameters for the *decay time* or *reverb time,* which let you set how long the reverb lasts before dying away, and the *mix* or *level,* which you use to set the ratio of the effected signal (called the *wet* signal) to the original (the *dry* signal). More sophisticated reverbs can include the following parameters:

- *Room type:* Lets you set the type of space the reverb will simulate: a small or large room, a hall, or another type of acoustic space.
- *Predelay time:* In an acoustic space, there is a short period of silence between a sound and the time when the initial echoes of the reverb begin. Different spaces have different amounts of predelay, which helps "tell" our ears how large the space is. Longer predelay settings also help separate the original (dry) signal from the effected (wet) signal, making it sound clearer and sometimes larger.
- *Early reflections:* The first echoes to arrive from the surrounding surfaces in a space are determined by the size and shape of the space, and "tell" our ears what type of space it is.
- *Diffusion:* Lets you set the number of the echoes in the reverb. Hall reverbs typically have low diffusion settings, while plate reverbs typically have high diffusion settings.
- *High-frequency and low-frequency reverb time:* These parameters let you specify the decay of higher and lower frequencies separately. Different surfaces, such as wood floors and concrete walls, absorb high and low frequencies at different rates, and these parameters let you simulate the sound of different environments more closely.
- *Reverb envelope:* Lets you control how much the volume of the reverb changes over time. In natural acoustic situations, the reverb echoes decay gradually over time. You can re-create this gradual decay, or gate the reverb so that it cuts off more abruptly.

Miscellaneous Effects

Miscellaneous effects don't fall into any of the other categories. They include denoising effects, pitch shifting effects, stereo enhancers, bass enhancers, and effects used to transform the sound of vocals. Each effect gives you a different way to modify the audio, and includes a unique set of parameters.

Working with Effects

You can add effects to a track, bus, or output in a project and then adjust the effect parameters to control the way in which the effects alter the sound of the track or project.

Working in the Effects Tab

The Effects tab is where you add effects and adjust effect parameters. When you click the Effects button in the header of a track, bus, or output, the Effects tab becomes active and displays the current effects settings for the track, bus, or output.

The upper part of the Effects tab contains lists of available effect categories. When you click an item in the Category list, the available effects in that category appear in the Effect list, where you can select and add them to the current effects chain.

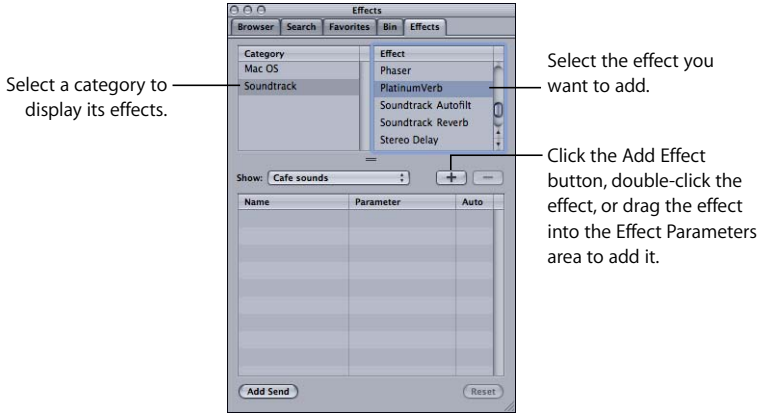
The lower part of the Effects tab shows the effects and sends in the current effects chain. You can show and edit effect and send parameters in the Effect Parameters area.

Adding Effects

You can add effects in the Effects tab. You can create *effects chains,* which are a series of effects in a specific order. You can reorder effects in an effects chain at any time, and hear the results immediately.

To add an effect to a track, bus, or output in the Timeline:

1. Click the Effects button in the header of the track, bus, or output in the Timeline.
2. Make a selection in the Category list to display the effects for that category in the Effect list.
3. In the Effect list, do one of the following:
   - Double-click the effect you want to add.
   - Select the effect name, then click the Add Effect button.
   - Drag the effect to the Effect Parameters area.

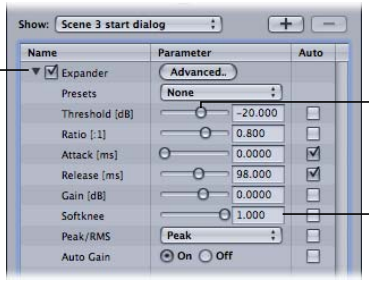


Adjusting Effect Parameters

Once you've added an effect, you can adjust the effect parameters to change the way the effect alters the sound of the track, bus, or output. Each type of effect has its own parameters, as discussed earlier. Effect parameters are displayed in the Effect Parameters area of the Effects tab as a set of sliders, checkboxes, and pop-up menus.

To adjust effect parameters:

1. Click the disclosure triangle next to the effect in the Effect Parameters area to display its parameters.
2. Adjust the effect parameter by dragging the slider, selecting the checkbox, or choosing an item from the pop-up menu. You can also adjust the parameter by entering a valid value in the field to the right of the parameter's control.



Click the disclosure triangle to display the effect's parameters.

Adjust a parameter by dragging its slider.

You can also adjust the parameter by entering a value in the field.

Chaining and Reordering Effects

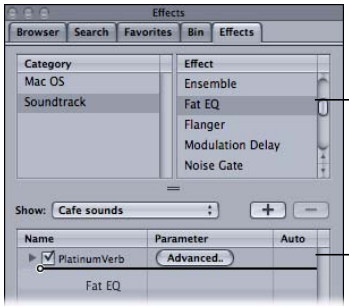
You can add more than one effect to a track, bus, or output. Adding multiple effects to an effects chain is called *chaining* effects.

When you add multiple effects, the effects are applied in sequence, meaning that the output of the first effect becomes the input for the next effect, and so on, for each effect in the chain. The order in which effects are applied is important, because each alters the input signal, which includes the output of previous effects in the chain. You can reorder effects and hear the difference in the way they alter the sound.

To add multiple effects to an effects chain, do one of the following:

- Double-click the effect you want to add in the Effect list.
- Select the effect in the Effect list, then click the Add Effect button.

The effect appears in the Effect Parameters area below any previously added effects. You can now set the parameters of the added effect.



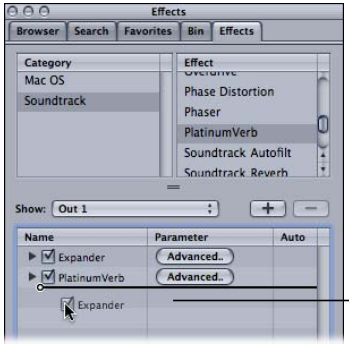
Select the effect you want to add, then click the Add Effect button.

You can also drag the effect to the Effect Parameters area.

Note: Adding more than a few effects to an effects chain can cause extreme changes to the sound of a project. This may be what you want, but in some cases can produce undesirable results. Listen to the project as you add effects to be sure you are satisfied with the results.

To reorder effects in an effects chain:

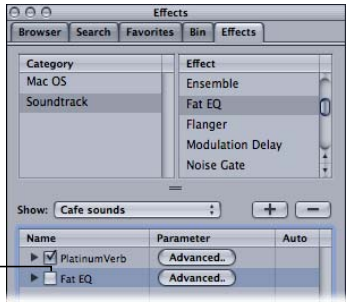
- In the Effect Parameters area, drag the effect up or down in the list to change its order.



Drag effects up or down in the list to reorder them.

Bypassing Effects

You can turn off an effect in the Effects tab, which "bypasses" the effect in the effects chain. When you bypass an effect, the effect is not heard, but all effect parameters are retained. To hear the effect again, reselect the effect's checkbox. This lets you hear how each effect in a chain alters the sound.



Deselect the checkbox next to the effect name to bypass the effect.

To bypass an effect:

- In the Effects tab, deselect the checkbox next to the effect.

To bypass all effects for a track:

- Select the track, Control-click the track's header, then choose Bypass Effects from the shortcut menu that appears.

Adding Sends to Tracks

You can add sends to an effects chain in order to create submixes. Routing audio from multiple tracks to a bus using a send lets you apply the same effects to all the tracks. When you add a send, the send is added at the end of the current effects chain. You can move the send to another place in the effects chain, choose the bus for a send, adjust send volume and pan, and bypass a send.

To add a send to a track:

- In the Effects tab, click the Add Send button.

A send appears below the last effect in the track's effects chain. You can assign the send to a bus in the Effects tab.

Reordering Sends

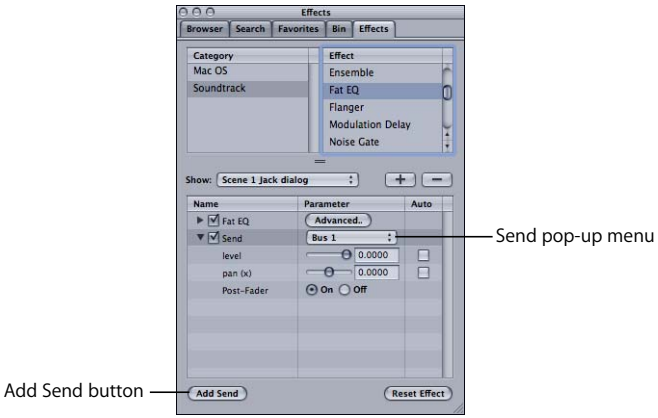
You can reorder sends in the Effects tab.

To reorder a send:

- In the Effect Parameters area, drag the send up or down in the list to change its order.

Choosing the Bus to Which a Send Is Routed

When you add a send, the audio is routed from the send to a bus. By default, the first send you add to an effects chain is routed to Bus 1, the second send is routed to Bus 2, and so on, if the default bus exists. Once you add a send, you can choose the bus to which the send is routed.



To choose the bus to which a send is routed:

- In the Effect Parameters area of the Effects tab, choose a bus from the Send pop-up menu.

Adjusting Send Volume

You can adjust the volume level for the audio routed through a send.

To adjust send volume:

1. If the send volume slider is not visible, click the disclosure triangle for the send.
2. Drag the send volume slider left to lower the volume level, or drag it right to raise the volume level.

Adjusting Send Pan Position

You can adjust the pan position for the audio routed through a send.

To adjust send pan position:

1. If the send pan slider is not visible, click the disclosure triangle for the send.
2. Drag the send pan slider left to pan the send to the left, or drag it right to pan the send to the right.

Bypassing Sends

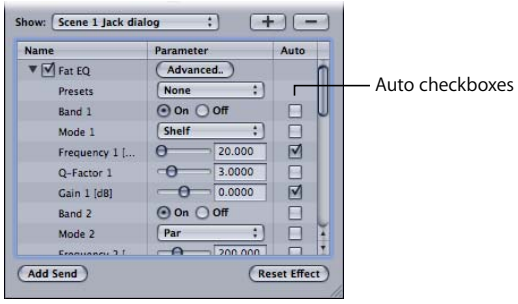
You can bypass a send. When you bypass a send, the audio is not routed to the bus for the send, and is not heard.

To bypass an effect:

- In the Effects tab, deselect the checkbox next to the send.

Automating Effect Parameters

You can automate effect parameters using envelopes. When you automate an effect parameter, you can change the value of the parameter over time.



To automate an effect parameter:

1. In the Effects tab, select the Auto checkbox next to the parameter's control.
2. In the Timeline, show the envelopes for the track, bus, or output.

   In the Timeline, you show the envelopes for the track, bus, or output with the effect.
3. Add and adjust envelope points in the effect's envelope.

   For information on adding and adjusting envelope points, see Chapter 9, "Working with Automation," on page 143.

   When you automate an effect parameter with units of time (seconds or milliseconds) or beats per minute (BPM) for values, the parameter is linked to the project tempo. If the tempo changes, the value of the parameter changes to keep the same relationship to the new tempo.

Resetting Effects to Their Default Settings

Every effect has default parameter settings that are displayed in the Effect Parameters area when you first add the effect. You can reset an effect to its default parameter settings, or reset an individual parameter to its default setting.

To reset an effect to its default settings:

- In the Effects tab, select the effect name in the Effect Parameters area, then click the Reset button.

To reset an individual effect parameter to its default settings:

- Select the parameter in the Effect Parameters area to select the parameter, then click the Reset button.

Removing Effects

You can remove an effect from an effects chain.

To remove an effect:

- Select the effect name in the Effect Parameters area, then click the Remove Effect button on the right edge of the Effects tab (or press the Delete key).

Advanced Settings for Effects

Many effects have an advanced settings window. The advanced settings window appears as a floating window with related controls grouped together, and may provide an appearance that simulates a hardware effects device. Effects with an advanced settings window have an Advanced button at the top of the Effect Parameters area in the Effects tab.

Advanced settings windows can contain different kinds of controls.

To show the advanced settings window for an effect:

- In the Effects tab, click the Advanced button for the effect.

When you show an advanced settings window, you can adjust the effect's parameters by moving the controls in the window. Each advanced settings window may have unique controls in addition to sliders, buttons, and value fields.

To adjust advanced effect controls:

1. In the advanced settings window, drag the sliders, type text, and operate the controls.
2. When you are finished, click the close button in the upper-left corner to close the advanced settings window.

Working with Effect Presets

Some effects have several combined parameter settings called *presets*. For example, the MatrixReverb effect (in the Mac OS category) has presets for various sizes of room, hall, and chamber settings, as well as Plate reverb and Cathedral settings. If an effect has presets, you can choose presets in the Effect Parameters area of the Effects tab or in the effect's advanced settings window.

To apply a preset to an effect:

- In the Effect Parameters area, choose the preset from the User Presets pop-up menu.

To show effect presets in the advanced settings window:

1. Click the Show Presets button in the advanced settings window.

   The Presets drawer appears to the right of the advanced settings window.
2. Click the User Presets disclosure triangle.

To add a preset:

1. Click the Add Preset (+) button.

   A blank, untitled preset appears in the User Preset list.
2. Click the name "Untitled" and type a name for the preset.

To apply an effect preset:

1. Select the preset you want to apply from either the Factory Preset or User Preset list in the Presets drawer.
2. Click the Load Preset button.

To create your own preset:

1. Adjust the controls in the advanced settings window to get the sound you want.
2. Click the Add Preset (+) button.
3. Click the "Untitled" text and give the new preset a name.

To delete a user-created preset:

1. Select the preset in the Presets drawer.
2. Click the Delete Preset (–) button.

You can't delete factory presets, only user-created ones.

To hide the Presets drawer:

- Click the Hide Presets button in the advanced settings window

Effect presets are stored in /Library/Audio/Presets.

Working with Automation

9

Using automation, you can create changes over time to volume, pan, effects, and other controls.

Automation offers a powerful way to add drama and interest to your projects. You can automate volume and pan changes to tracks, busses, and outputs and automate changes to effect and effect send parameters.

Soundtrack gives you two ways to work with automation:

- You can add and adjust envelope points on envelopes in the Timeline.
- You can record changes to sliders, faders, and other controls in the Timeline and the Effects tab.

Working with Envelopes

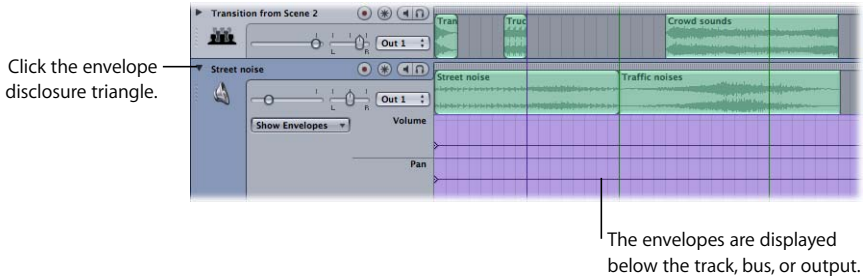
In the Timeline, each track, bus, and output has a set of envelopes. The envelopes appear as horizontal lines stretching across the length of the project directly below the track, bus, or output. You adjust an envelope by adding *envelope points* and moving the envelope points to new values at different points in the Timeline.

The Timeline also includes master envelopes for tempo and transposition. When you show the master envelopes, they appear below the last output in the Timeline.

For video editors accustomed to working in Final Cut Express, envelopes provide the same type of functionality as keyframes. The difference is that you can edit envelopes at a finer level of precision than you can using keyframes, allowing extremely powerful control over automated changes.

Track, Bus, and Output Envelopes

Each track and bus has envelopes for volume and pan, and each output has a volume envelope. By default, the envelopes are hidden. When you show the envelopes, they appear in rows below the track, bus, or output in the Timeline.



To show the envelopes for a track, bus, or output:

- Click the envelope disclosure triangle in the track header. Click the disclosure triangle again to hide the envelopes.

The ranges of volume and pan envelopes are equivalent to the ranges of the corresponding track controls:

- *Volume envelopes:* The range is from –96 dB to +6 dB.
- *Track pan envelope:* The range is from 100% Left to 100% Right pan, with Centered at the midpoint, 0 (zero).

When you add effects to a track, bus, or output, you can automate the effect parameters by adding an envelope for any parameter to the envelopes for the track, bus, or output. The envelopes are different for each type of effect. For information on adjusting effect parameters, see "Working with Audio Effects" on page 125.

Master Envelopes

Each project has master envelopes for transposition and tempo. When you display the master envelopes, they appear below the outputs in the Timeline.

To show or hide the master envelopes, do one of the following:

- Choose View > Show Master Envelopes.
- Click the Master Envelopes button in the lower-left corner of the Project window.
- Click the Master Envelopes disclosure triangle in the Timeline.

Repeat the procedure to hide the master envelopes.

The ranges of the master envelopes are as follows:

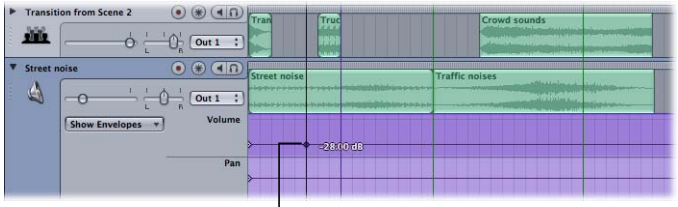
- *Master transpose envelope:* Ranges from –12 semitones to +12 semitones.
- *Master tempo envelope:* Ranges from 60 bpm to 200 bpm.

Adding Envelope Points

You create changes to an envelope by adding envelope points to the envelope, and moving the envelope points to different values.

To add an envelope point to an envelope:

- Double-click the envelope at the position where you want to add the envelope point. You may want to zoom in to work more precisely.



Double-click an envelope to add an envelope point.

When you add envelope points, they snap to the closest Snap To position if snap is turned on. For information on setting the Snap To value, see "Using Snap" on page 70.

Selecting Envelope Points

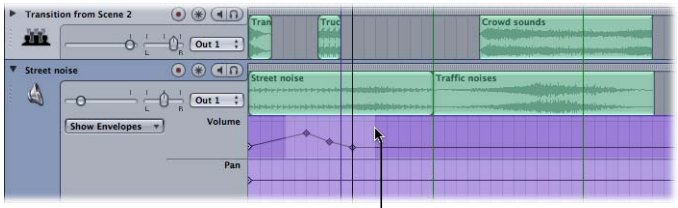
You can select a single envelope point or a group of adjacent or nonadjacent envelope points.

To select an envelope point:

- Click the envelope point.

To select multiple envelope points, do one of the following:

- Drag from an area in the automation row before the first envelope point you want to select to an area after the last envelope point you want to select.
- If the envelope points are adjacent, Shift-click the first envelope point, then the last envelope point you want to select. All envelope points in between are also selected.
- Command-click each envelope point you want to select. You can select adjacent or nonadjacent envelope points by Command-clicking.



Drag in the envelope's row to select multiple envelope points.

To deselect a selected envelope point, do one of the following:

- Command-click the selected envelope point.
- Click in the automation row or somewhere else in the Timeline to deselect all selected envelope points.

Moving Envelope Points

Once you add an envelope point, you can drag it up or down to change its value. As you drag an envelope point up or down, its value appears to the right of the pointer. You can drag an envelope point left or right to change its position in time. You can also select and move multiple envelope points.

When you move envelope points, the position of the envelope points snaps to the closest Snap To position if snap is turned on. For information on setting the Snap To value, see "Using Snap" on page 70.

To move an envelope point:

- Select the envelope point, then drag it to a new position.

Each envelope has an envelope point at the beginning of the Timeline. You can adjust the envelope by moving this envelope point up or down. If no envelope points have been added, dragging the envelope's handle adjusts the envelope for the entire project.

If you add more than one envelope point to an envelope, you can move envelope points using the corresponding slider. When you move the slider, the envelope points closest to the playhead (the closest before and the closest after) move by the same amount as the slider.

Changing the Values of Envelope Points Numerically

You can also change the value of an envelope point numerically.

To change the value of an envelope point numerically:

1. Control-click the envelope point, then choose Set Value from the shortcut menu.
2. Type a new value for the envelope point in the dialog that appears.

The envelope point moves to the new value. You can set the envelope point to the same value as the previous or next envelope point on the envelope from the shortcut menu.

Changing the Position of Envelope Points Numerically

You can change the position of an envelope point in the Timeline numerically.

To change the position of an envelope point numerically:

1. Control-click the envelope point, then choose Set Position from the shortcut menu.
2. In the dialog that appears, click the left or right arrow, click the center of the value slider and drag left or right, or double-click the value slider and type a new position.

The envelope point moves to the new position.

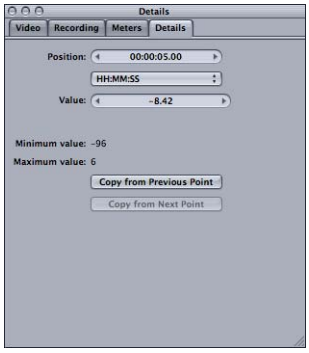
Viewing and Editing Envelope Point Details

You can also view and edit the value, position, and other details for an envelope point in the Details tab.

To view envelope point details:

1. In the Utility window, click the Details tab.
2. Select the envelope point for which you want to view details.

   The details for the envelope point appear in the Details tab, including its value and position. You can edit the value and position in the Details tab, change the format for the position, and copy the value of the previous or next envelope point (if one exists).



To change the value of an envelope point in the Details tab:

1. With the Details tab active, select the envelope point.
2. In the Details tab, do one of the following:
   - Click the left arrow in the Value value slider to decrease the value, or click the right arrow to increase the value.
   - Click the center of the value slider, then drag the slider that appears left or right to change the value.
   - Click the text in the value slider to select it, then type a new value.

To change the position of an envelope point in the Details tab:

1. With the Details tab active, select the envelope point.
2. In the Details tab, do one of the following:
   - In the Position value slider, click the left arrow to move the envelope point back (toward the start of the project) or click the right arrow to move the envelope point forward (toward the end of the project).
   - Click the center of the Position value slider, then drag the slider that appears left or right to change the position.
   - Click the text in the Position value slider, then type a new value.

To change the units shown in the Position value slider:

- Choose the units you want to show from the pop-up menu next to the Position value slider.

To copy the value of the previous envelope point:

1. With the Details tab active, select the envelope point to which you want to copy the value.
2. In the Details tab, click Copy From Previous Point.

To copy the value of the next envelope point:

1. With the Details tab active, select the envelope point to which you want to copy the value.
2. In the Details tab, click Copy From Next Point.

Nudging Envelope Points

There are several ways in which you can nudge envelope points using the arrow keys:

- Hold down the Option key and press the Left or Right Arrow key to move the envelope point by one pixel.
- Hold down the Option and Shift keys and press the Left or Right Arrow key to move the envelope point to the previous or next gridline.
- Hold down the Option key and press the Up or Down Arrow key to move the envelope point up or down by one pixel.
- Hold down the Option and Shift keys and press the Up or Down Arrow key to move the envelope point up or down by five pixels.

Cutting, Copying, and Pasting Envelope Points

You can cut and copy selected envelope points and paste them at a different position in the automation row.

To cut envelope points:

- Select the envelope point, then choose Edit > Cut (or press Command-X).

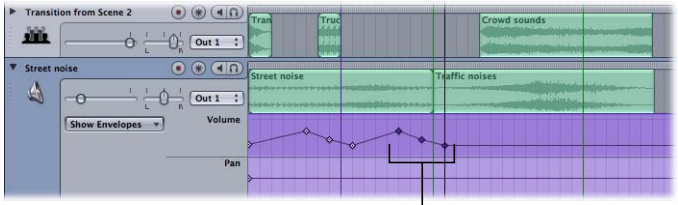
To copy envelope points:

- Select the envelope points, then choose Edit > Copy (or press Command-C).

To paste envelope points:

- Set the playhead to the point where you want to paste the envelope points, then choose Edit > Paste (or press Command-V).

When you paste envelope points into an automation row, the new envelope points replace any existing envelope points, and the automation takes the shape of the cut or copied envelope in the pasted area.



Pasting envelope points into an envelope replaces the existing area of the envelope with the cut or copied area.

When pasting envelope points, the following conditions apply:

- Envelope points can only be pasted into an envelope of the same type as the envelope from which they were cut or copied. For example, envelope points from a volume envelope can only be pasted into a volume envelope, not a pan or tempo envelope.
- Envelope points for an effect parameter can only be pasted into an envelope for exactly the same effect parameter in exactly the same type of effect. You cannot paste envelope points from one effect into another, even if they have parameters with the same name.

Deleting Envelope Points

After listening to the results of your edits, you may decide to delete some envelope points.

To delete envelope points:

- Select the envelope points, then choose Edit > Delete (or press the Delete key).

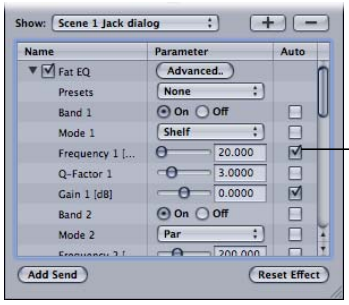
When you delete envelope points, the envelope adjusts accordingly, moving evenly from the preceding envelope point to the next envelope point. If there are no other envelope points, the envelope becomes horizontal, maintaining its initial value for the entire project.

Automating Effect and Send Parameters

You can automate effect parameters for tracks, busses, and outputs by adding envelopes for the effect parameters, then adding and adjusting envelope points. You can also automate send parameters for tracks by adding an envelope for the send parameters, then adding and adjusting envelope points.

To add an envelope for an effect or send parameter:

1. Open the Effects tab and select the effect you want to automate.
2. In the Effect Parameters area, select the Auto checkbox for the parameter.



Click the Auto checkbox for an effect parameter to add an envelope for the parameter.

To remove an envelope for an effect parameter:

- Deselect the Auto checkbox for the parameter in the Effect Parameters area of the Effects window.

The range of values for an effect or send parameter envelope is the same as the range for the parameter in the Effects tab.

For detailed information on adjusting effect parameters, see "Adjusting Effect Parameters" on page 135.

Recording Automation Data

In addition to working with envelopes, you can record automation data in Soundtrack. You can record movements you make to faders, sliders, and other onscreen controls using the pointer. When you record movements to onscreen controls, the corresponding envelope in the Timeline changes to display the recorded automation data. You can edit the envelope to fine-tune the automation data after recording.

Automation Modes

Soundtrack provides three modes for using and recording automation. The automation modes determine whether automation data is recorded, and what happens when you release the control being recorded.

- *Read:* In Read mode, existing automation data is active when you play the project, but no new automation data is recorded.
- *Touch:* In Touch mode, movements to controls are recorded when you play the project, overwriting any existing automation data until you release the control. When you release a control in Touch mode, the control returns to the value it previously had at the point in the Timeline where you release the control. No envelope points after that point are added or changed.
- *Latch:* In Latch mode, movements to controls are recorded when you play the project, overwriting any data from the point you start recording until you stop playing the project. When you release a control in Latch mode, the control maintains the same value at which you released it.

To record automation data:

1. Choose either Touch or Latch from the Automation Mode pop-up menu.
2. Set the playhead to a position before the point where you want to start recording.
3. Click Play (or press the Space bar) to start the project playing.
4. While the project plays, move the control you want to record.

Once you have recorded automation data, you can show the envelope for the control and add and adjust envelope points on the envelope to fine-tune the automation. For information on working with envelopes, see "Working with Envelopes" on page 143.

Thinning Envelope Points in Recorded Automation Data

Recording automation data can generate a large number of envelope points. The number of envelope points recorded can make editing envelopes difficult, and in some cases affect playback performance.

You can reduce or "thin" the number of envelope points recorded from a control surface in the Project preferences. You set the amount of thinning using the Automation Recording Sensitivity slider. The automation data is thinned when you finish recording automation.

To set the amount of thinning:

1. Choose Soundtrack > Preferences, then click the Project button.
2. In the Project pane, drag the Automation Recording Sensitivity slider to adjust the amount of thinning.

   When the slider is set to High, no thinning occurs. The envelope contains every movement of the control. Dragging the slider to any position other than High results in some thinning of envelope points. By default, the slider is set to a moderate amount of thinning.

   For more information about Soundtrack Project preferences, see "Project Preferences" on page 74.

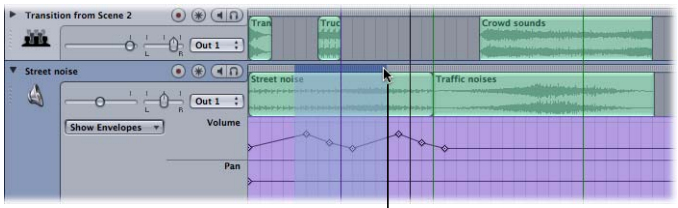
Working with Timeslices

Timeslices let you select the contents of a track, or of multiple tracks, and the track's envelopes for a section of time. When you select a Timeslice, the Timeslice selection area is highlighted in blue.

Selecting Timeslices

To select a Timeslice from a single track:

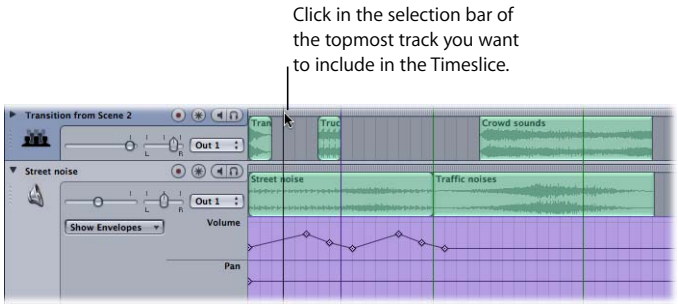
- Drag in the selection bar along the top of the track.



The selection snaps to the nearest Snap To position if snap is turned on. For information about setting the Snap To value, see "Using Snap" on page 70.

To select a Timeslice from multiple tracks:

1 Click in the selection bar of the topmost track you want to include in the Timeslice, at one end of the area you want to select.



2 Shift-click in the selection bar of the bottom track you want to include in the Timeslice at the opposite end of the area you want to select, or Command-click in nonadjacent tracks to add those tracks to the Timeslice.

You can select a master Timeslice that includes the audio content and the envelopes of all tracks, including the video's audio track.

To select a master Timeslice:

- Drag in the selection bar of the video track, located above the Time ruler.

Cutting, Copying, and Pasting Timeslices

You can cut or copy a Timeslice and paste it at a different position in the Timeline.

To cut a Timeslice:

- Select the Timeslice, then choose Edit > Cut (or press Command-X).

To copy a Timeslice:

- Select the Timeslice, then choose Edit > Copy (or press Command-C).

To paste a Timeslice:

- Set the playhead at the position where you want to paste the Timeslice, then choose Edit > Paste (or press Command-V).

  If the Timeslice is from a single track, it is pasted in the same track at the current playhead position. If the Timeslice includes multiple tracks, the topmost track of the Timeslice is pasted in the currently selected track, and the remaining tracks are pasted in the tracks below the selected track. If not enough tracks exist for the number of tracks in the Timeslice, a dialog appears asking if you want to create additional tracks.

Deleting Timeslices

To delete a Timeslice:

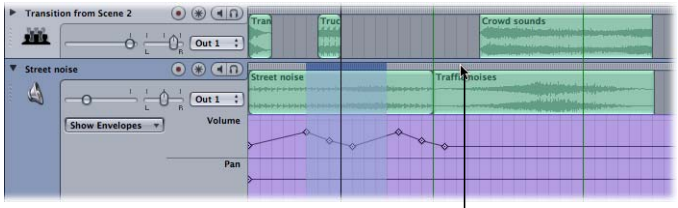
- Select the Timeslice, then choose Edit > Delete (or press the Delete key).

Changing the Timeslice Selection Area

You can change the length of a Timeslice selection area to include more of the Timeline, either graphically or numerically.

To extend the Timeslice selection area graphically:

- Shift-click in any track included in the Timeslice at the point to which you want to extend it.



Shift-click in the Timeline to extend a Timeslice.

Below and to the right of the transport controls is the Selection Length value slider. When a Timeslice is active, the Selection Length value slider shows the length of the active Timeslice.

The units shown in the Selection Length value slider depend on the project time format. For projects using Time-based format, the value slider shows the current Time ruler units, using the current frame rate. For projects using Beats-based time format, the value slider shows measures, beats, and beat divisions at the current tempo.

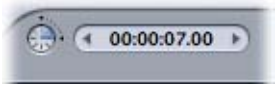
To change the length of a Timeslice numerically:

1. Click the value slider.

   The field becomes a value field, with the current value selected.

2. Type a new value into the field, using appropriate punctuation.

3. Press Tab or Enter to confirm the new value.



To lengthen the Timeslice in increments:

- Click the left arrow to lengthen the beginning of the Timeslice in increments, or click the right arrow to move the end of the Timeslice in increments.

To lengthen the Timeslice dynamically:

- Click the center area of the field (where the numbers are), then drag left to lengthen the beginning of the Timeslice, or drag right to lengthen the end of the Timeslice.

  For projects using Time-based format, the left and right arrows lengthen the Timeslice in seconds. For projects using Beats-based format, the arrows lengthen the Timeslice in beats.

Recording Audio in Soundtrack 10

You can record your own audio in a track in the Timeline.

You get ready to record by setting recording preferences and checking that your audio equipment is working. Next, you enable a track for recording, or record audio in a new track. You can record a single take or record multiple takes. If you record multiple takes, you can review them after recording and choose which one to use in your project, or assemble a composite take using segments of each recorded take.

Getting Ready to Record

Before you start recording, also make sure that any audio equipment you plan to use in your recording session (such as microphones, musical equipment, mixers, or external processors) is connected to your computer and is working.

When you record, the recorded audio is saved to disk at the location set in the Recording pane of the Preferences window. Audio files, while smaller than video files of comparable duration, can be quite large (each minute of 16-bit, 44.1 kHz stereo audio requires roughly 10 MB of disk space), so you should make sure you have enough free disk space to store your recordings before you start. You can set the input device and output monitoring device for recording in the Preferences Recording pane, or change them in the Recording tab. For detailed information on Recording preferences, see "Recording Preferences" on page 75.

Recording Audio in the Timeline

You record in the Timeline by enabling a track for recording, setting the playhead, then clicking Record. You can record a single take or record multiple takes by turning on cycling before you start recording. When you finish recording, your recorded audio appears in a track in the Timeline. If you record multiple takes, you can audition each take to choose which one you want to use in your project. You can also assemble composite takes by splitting and combining your recorded takes.

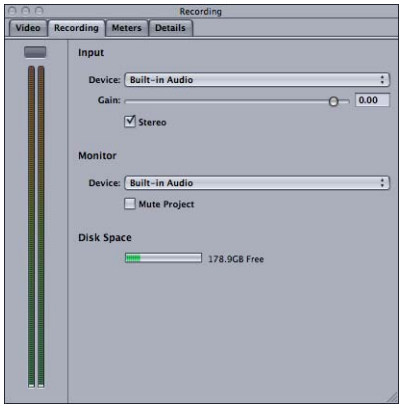
Enabling a Track for Recording

Before you start recording, you enable the track you want to record to. You can record audio only to a track, not to a bus or output. If no track is enabled for recording, a new track is created below the existing tracks, and the take appears on the new track when you click the Record button.

To enable a track for recording:

- Click the Record Enable button (the red circle) in the track's header.

The Recording tab becomes active, and shows the current recording settings. You can adjust recording settings before you start recording, or between recordings.



To adjust recording settings:

1. In the Recording tab, choose the input device and channel (or pair of channels) from the Input Device pop-up menu.
2. Choose the device and channel (or pair of channels) to use for monitoring the recorded audio from the Monitor pop-up menu.
3. If you want to record without hearing the existing audio clips in the project, select the Mute Project checkbox.
4. If you want to record in mono, deselect the Stereo checkbox.

The level meters in the Recording tab show the level of the audio signal in the input channel. Before recording, you may want to watch the level meters and set the input level, to assure a high enough signal level and to avoid clipping.

Recording a Single Take

You record a single take by setting the playhead to the point where you want recording to start, then clicking the Record button. Recording starts at the playhead position, and ends when you click either the Record or Play button.

To record a single take:

1. If you want to record to an existing track, enable the track.
2. Set the playhead to the point where you want recording to start.

   You can set the playhead using any of the procedures described in "Setting the Playhead" on page 51.
3. Click the Record button in the transport controls to start recording.

   As you record, the level meters in the Recording tab show the levels of the input signal being recorded. If the input signal clips (rises above 0 dB), the peak indicator lights red.
4. To stop recording, do one of the following:
   - Click the Record button again.
   - Click the Play button.

   You can punch in and punch out while recording a single take using the Record button. For example, you can start the project playing, then punch in at the point where you want to start recording by clicking the Record button. To punch out, click the Record button again. When you click the Record button while recording, recording stops, but the project continues playing. You can punch in and punch out multiple times while the project is playing.

   When you click the Play button, both recording and playback stop.

Recording Multiple Takes

You can record multiple takes in the Timeline. You can record multiple takes using the playback region to define where each take starts and ends, or record for the duration of the project. When you record multiple takes, the takes are "stacked" in a single clip in the Timeline. You can audition each take, and can create composite takes by splitting the clip and choosing the take for each split segment.

To record multiple takes:

1. If you want to record to an existing track, enable the track.
2. If cycling is turned off, click the Cycle button in the transport controls to turn it on.
3. Set the playback region to the part of the Timeline where you want recording to start and end.

   For information on setting the playback region, see "Working with the Playback Region" on page 93.

   If no playback region is set, recording starts at the beginning of the project and lasts until the end of the last clip in the project. If the project contains no clips, a single take is recorded, starting at the current playhead position.
4. Click the Record button in the transport controls to start recording.

   As you record, the level meters in the Recording tab show the levels of the input signal being recorded. If the input signal clips (rises above 0 dB), the peak indicator lights red.

   The playhead advances to the end of the playback region, then returns to the beginning of the playback region for the next take.
5. To stop recording, click the Play button.

When you record multiple takes, the takes are recorded sequentially to an audio file in the recording location set in Recording preferences. The takes appear in a single clip in the Timeline. The current take number appears in the lower-right corner of the clip. You can choose which take you hear when you play the project. When you finish recording, the current take number corresponds to the number of completed takes.

To choose a take, do one of the following:

- Select the clip, choose Clip > Recording Take, then choose the take number from the submenu.
- Control-click the clip, choose Take from the shortcut menu, then choose the take number from the submenu.

You can split a recorded clip, and choose the take for each segment of the split clip to create a composite take. You can also copy a clip onto several tracks, split the copies, and choose the take for each split copy of the clip.

Saving Recorded Clips

You can save your recordings in the Timeline. When you save a clip, you can name the clip, choose where to save it, and save it as either a looping or non-looping file.

To save a recorded clip:

1. Do one of the following:
   - Select the clip in the Timeline, then choose Clip > Save Clip As.
   - Control-click the clip in the Timeline, then choose Save Clip As from the shortcut menu.
2. In the Save As dialog, type a name for the clip and browse to the location where you want to save it.
3. Select the Looping button to save the clip as a looping file, or click the Non-looping button to save the clip as a non-looping file.
4. Click Save.

You can use Apple Loops Utility, a companion application included with Soundtrack, to add tags to your saved recordings to make them easier to find using the Search tab in Soundtrack.

Distributing Soundtrack Projects

11

Once you have created a final mix of a project, you can export the project mix. You can also export individual tracks, busses, or outputs, export a project containing a movie to QuickTime, and make roundtrips between Final Cut Express and Soundtrack.

You can export a project to a stereo audio file and set the exported file's bit depth and sample rate. You can also export selected tracks, busses, or outputs to either a stereo audio file or paired mono files. If your project includes a video, you can also export the project.

You can import an exported audio file into Final Cut Express (or another video application) to add to a video project, or into a digital audio application for further processing. You can also burn it on a CD or DVD, or open it in iTunes and convert it to MP3 or AAC format that you can distribute over the Internet.

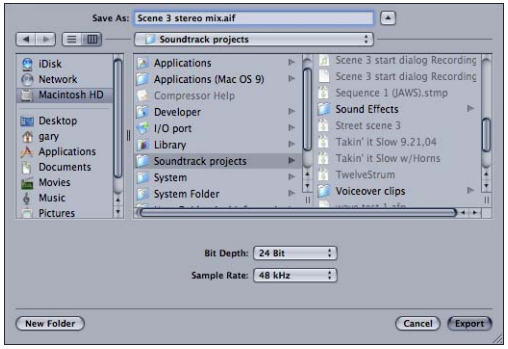
Exporting a Project Mix

When you export a mix, all unmuted tracks routed to the physical outputs 1 and 2 are included in the exported file. You can exclude any tracks from the exported mix by muting those tracks.

To export a project to a stereo audio file:

1 Choose File > Export > Export Mix.

The Export dialog appears.



2 Choose a bit depth for the exported file from the Bit Depth pop-up menu.

3 Choose a sample rate for the exported file from the Sample Rate pop-up menu.

4 Type a name for the exported file, and browse to the location where you want to save the file.

5 Click Export.

When you export a project that includes an effect (for example, a reverb or delay) that produces a tail that extends past the end of the project, the exported file lengthens to include the tail.

Remember that you can create as many mixes of your project as you like by muting tracks, adjusting controls, effects, and envelopes, and then exporting each version as a separate mix.

Exporting Selected Tracks, Busses, and Outputs

You can export selected tracks, busses, or outputs in a project. When you export selected tracks, busses, or outputs, each is exported to a stereo AIFF file. The output file is given the same name as the track, bus, or output being exported. You can also export a track, bus, or output to a pair of mono files; in this case, the letter *L* is appended to the filename of the left mono file, and the letter *R* is appended to the right mono file.

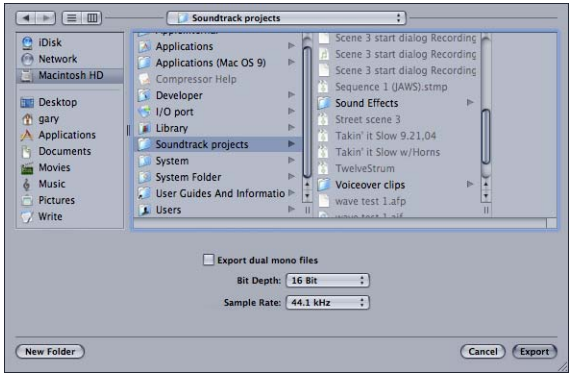
To export individual tracks, busses, or outputs:

1. In the Timeline, select the tracks, busses, or outputs you want to export, then choose File > Export > Export Selected [*item*].

   The [*item*] shown in the menu changes depending on whether tracks, busses, or outputs are selected.

   If nothing is selected, each unmuted track, bus, and output in the project is exported as an individual AIFF file.

2. In the Export dialog, choose the sample rate for the exported files from the Sample Rate pop-up menu.



3. Choose the bit depth for the exported files from the Bit Depth pop-up menu.
4. Optionally, select the "Output dual mono files" checkbox to export the selected tracks, busses, and outputs as dual mono files, then click Save.
5. Browse to the location where you want to save the exported files.
6. Click Export.

   Each selected track, bus, or output is exported as a single stereo AIFF file or as a pair of dual mono AIFF files. Muted and unselected tracks, busses, or outputs are not exported.

   When you export a track, bus, or output that includes an effect (for example, a reverb or delay) that produces a tail that extends past the end of the project, the exported file lengthens to include the tail.

Exporting to QuickTime

If your Soundtrack project contains a QuickTime movie file with a video track, you can export the project to a new QuickTime movie file. Exporting to QuickTime creates a copy of the original movie file, with the Soundtrack project's audio mixed into the movie's audio track.

To export a project to a new QuickTime movie file:

- Choose File > Export to QuickTime.

QuickTime movies can be either *self-contained* (in which case the audio and video data are saved in the movie file) or *reference* (in which case the movie contains only references to the media it uses). Reference movies are much smaller in size than self-contained movies, but playing a reference movie requires that all the media used by the movie be present and in the expected location.

By default, both reference movies and self-contained movies are exported as self-contained when you export to QuickTime in Soundtrack. You can choose to keep a reference movie as a reference movie. Self-contained movies cannot be changed to reference movies.

To keep a reference movie as a reference movie when exporting:

- Choose File > Export to QuickTime, then deselect the "Make movie self-contained" checkbox in the Export dialog.

Exporting to a QuickTime movie file is intended as a way to distribute completed projects. It's a good idea to save your project in case you want to make any changes. The movie file cannot be edited in Soundtrack

Roundtrips Between Final Cut Express and Soundtrack

As you work on your video project in Final Cut Express and develop the score in Soundtrack, you can make roundtrips between the two applications. Several features of both Final Cut Express and Soundtrack make roundtrips easy.

Making the First Roundtrip

When you export a sequence as a QuickTime movie from Final Cut Express, select the sequence in the Browser, then choose File > Export > For Soundtrack. If your Final Cut Express project includes scoring markers, be sure Audio Scoring Markers is selected in the Markers pop-up menu of the Export dialog.

You import the sequence into Soundtrack, where you can view it in the Video pane of the Viewer and see the video clip in the Timeline. If the sequence contains audio, a new audio track containing the video's audio appears below the video track. You create your score in Soundtrack, and then export it by choosing File > Export Mix. In most cases you'll want to mute the video's audio track before exporting; otherwise, the video's audio will be included in the exported file.

You import the AIFF file exported from Soundtrack to your Final Cut Express project as an audio track using the File > Import Files command. You can hear the music as you continue editing your video project.

Making Subsequent Roundtrips

When you export an updated version of your sequence for use with Soundtrack by choosing File > Export > For Soundtrack, Final Cut Express recognizes any audio tracks imported from Soundtrack, and displays a dialog letting you select which Soundtrack audio files to export as part of the video. In most cases, you'll leave these unselected, so the audio from Soundtrack is not added to the video. Make sure to export the updated video file with exactly the same name, and to select the "Export using previous settings" checkbox in the Export dialog.

When you reopen the project in Soundtrack, the updated video appears in the Video pane, the updated video clip appears in the video track, and any added scoring markers appear in the Timeline. When you are ready to export the updated score, hold down the Option key as you choose File > Export Mix. This automatically re-exports the project with the same name, bypassing the Export dialog.

When you reopen the video project in Final Cut Express, the updated Soundtrack audio tracks are automatically recognized and imported into the project, as long as the filename and the file's location on disk remain the same. You can continue editing the video into Final Cut Express, hearing the updated Soundtrack audio when you play the video.

You can make as many roundtrips as you wish, using the steps previously described. You can complete the project in Final Cut Express or import the finished video to Soundtrack and export the project as a QuickTime movie.

Exporting Audio to Final Cut Express

When your score is ready to export, you export the project as a stereo AIFF file.

To export a Soundtrack project for use with Final Cut Express:

- Choose File > Export Mix.

In most cases you'll want to mute the video's audio track before exporting; otherwise, the video's audio will be included to the exported file.

Before exporting the project, make sure that you have eliminated all instances of clipping from the project. Once the project is saved as an AIFF file, it is impossible to remove clipping from the file without reducing its audio quality.

If you plan to mute the video's audio track when you export the project, you may want to mute the video's audio track when you check levels before exporting. Checking levels with the video's audio unmuted will add its signal to the rest of the signal displayed by the audio meters, and the levels displayed by the audio meters will not match those of the exported file.

You can mute any tracks you wish to exclude from the project before exporting. The output exported to an AIFF file does not include muted tracks. You can also export a track, bus, or output by selecting the item you want to export, then choosing File > Export Selected [*item*].

Distributing a Project and Its Media Files Together

You can save a project with all of the media files it uses together in the same folder. Saving the project and its media files together is useful when you want to move the project from one computer to another in order to continue working on it, or to archive the project and media for later use.

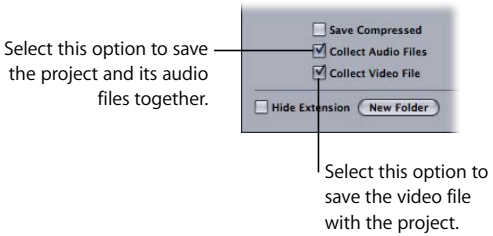
To save a project and its audio files together:

1. Choose File > Save.
2. In the dialog that appears, select the Collect Audio Files checkbox.
3. Navigate to the folder in which you want to save the project and its audio files, then click Save.

   The project file, and a copy of every audio file the project uses, are saved in the selected location.

4 You can optionally create a new folder for the collected project. To create a new folder for the project, click the triangle next to the Where pop-up menu to expand the Save window, then click New Folder. It's a good idea to save each collected project in its own folder.

5 If the project includes a video, you can optionally select the Collect Video File checkbox to save the video in the selected folder.


Save Compressed
Collect Audio Files
Collect Video File
Hide Extension
New Folder
Select this option to save the project and its audio files together.
Select this option to save the video file with the project.

If the folder already contains any of the media files, an alert appears, asking if you want to replace the existing files.

Note: Because video files are typically very large files, saving a copy of the video file may take several minutes, and may require a large amount of disk space.

Using Apple Loops Utility

Some audio files you use in Soundtrack can include metadata called *tags*. Tags provide information about the audio recorded in a file. Soundtrack uses tags in one of two ways:

- To help locate files using the Search feature in Soundtrack
- To provide information that Soundtrack uses when matching the file's tempo and key to the project tempo and key, for the best possible playback quality

Both AIFF and WAV file formats can include tags. Libraries of audio files created for use with loop-based music software are usually tagged, and Soundtrack recognizes the tags used in most popular file formats.

What Is Apple Loops Utility?

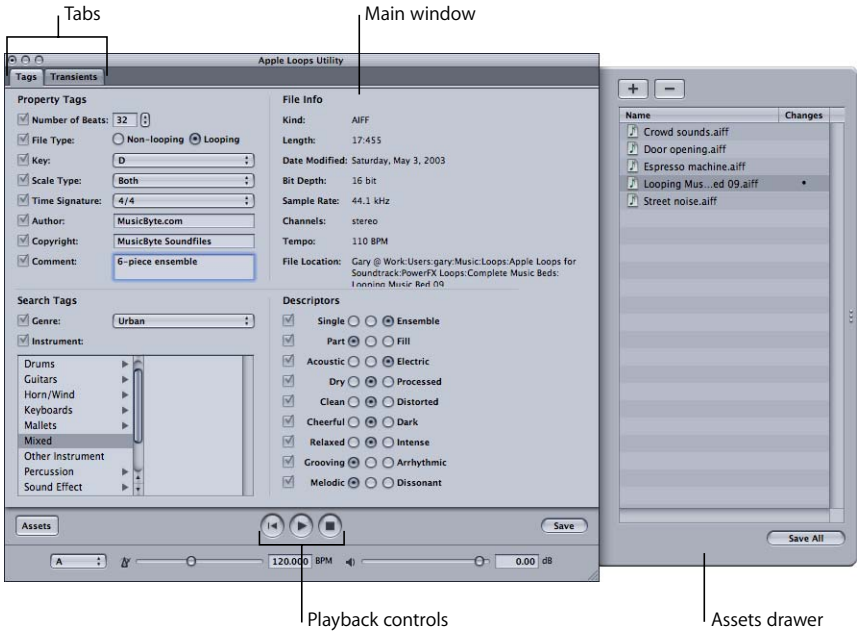
Apple Loops Utility is a companion application to Soundtrack that you can use to view and manage tags in audio files. You can add and change tags using Apple Loops Utility; you can also tag multiple files, a process known as *batch tagging*.

Apple Loops Utility can read both AIFF and WAV file formats. When you save changes you make to either type of file, the file is saved as an AIFF file, the default file format for Soundtrack. The set of tags you can work with using Apple Loops Utility includes all of the tags in WAV files tagged for use with Sony's ACID music application, as well as additional tags.

Tagged audio files can also contain information about *transients*. Transients indicate where beats occur in the file, and Soundtrack uses transients to play back audio files at the highest level of quality. Apple Loops Utility can detect transients present in an audio file, and you can use Apple Loops Utility to add markers for additional transients and move them to new locations.

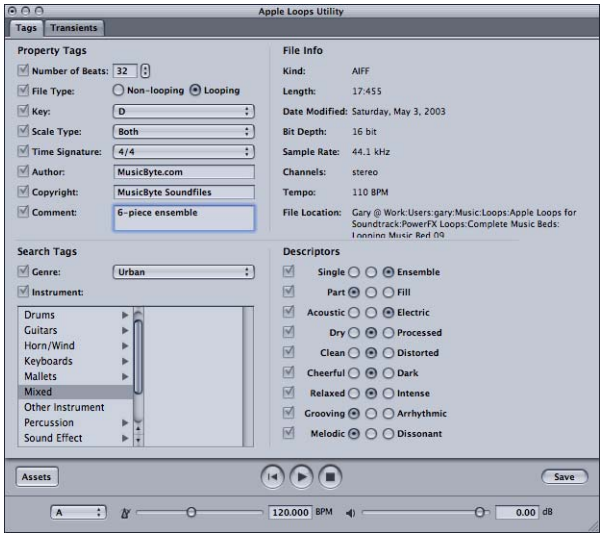
The Apple Loops Utility Interface

The Apple Loops Utility interface consists of a window with two tabs: the Tags tab and the Transients tab. The bottom of the window includes a set of playback controls and file management buttons. Apple Loops Utility also includes an Assets drawer, located to the right of the main window, where you manage open files.



Tags Tab

The Tags tab includes areas for different types of tags, and also includes a set of playback controls you can use to listen to a file open in Apple Loops Utility. Listening to a file can help you decide which tags are appropriate for the file.



Property Tags

- *Number of Beats field:* Displays the number of beats in the file.
- *File Type buttons:* Set the file type, which can be Non-looping or Looping.
- *Key pop-up menu:* Sets the key of the file.
- *Scale Type pop-up menu:* Sets the file's scale type. The choices are Major, Minor, Good for Both, and Neither.
- *Time Signature pop-up menu:* Sets the file's time signature. The choices are 4/4, 3/4, 5/4, 6/8, and 7/8.
- *Author field:* Displays the name of the file's author. You can enter a new name by typing in the field.
- *Copyright field:* Displays the file's copyright data, if it exists. You can enter new data by typing in the field.
- *Comment field:* Displays any comments about the file. You can enter comments by typing in the field.

Search Tags

These tags are used by the Search feature in Soundtrack when you search for files matching specific criteria.

- *Genre pop-up menu:* Displays choices for the musical genre of the file.
- *Instrumentation list:* Displays choices for the musical instrument or instrument category recorded in the file. Selecting an instrument category in the left column displays the list of instruments in that category in the right column.

File Info

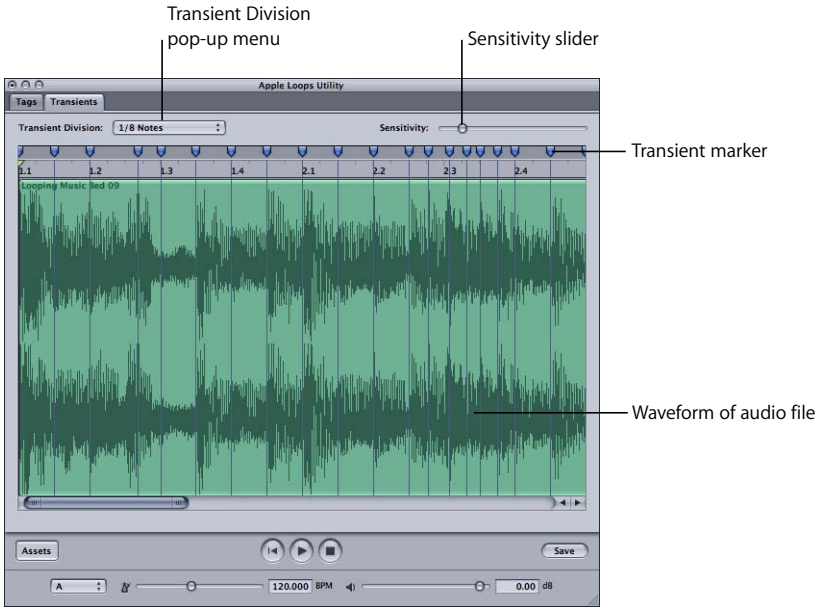
This area of the Tags tab includes rows with Kind, Length, Date Modified, Sample Rate, Channels, Tempo, and File Location information. This information is for viewing only, and cannot be edited in the Tags tab.

Descriptors

Descriptors are complementary pairs of keywords describing the mood or character of the music recorded in the file. Each pair of keywords has a row of buttons, allowing you to choose either one keyword from the pair, or neither keyword.

Transients Tab

The Transients tab contains a large waveform display, with a Beat ruler and a horizontal scroll bar. Markers indicate the position of transients in the file. Typically, transients correspond to the peaks or most pronounced amplitude changes in a sound's waveform. The Transients tab includes controls for the beat division and sensitivity with which Apple Loops Utility detects transients in the file. You can also listen to the file using the playback controls to help determine where transients occur.

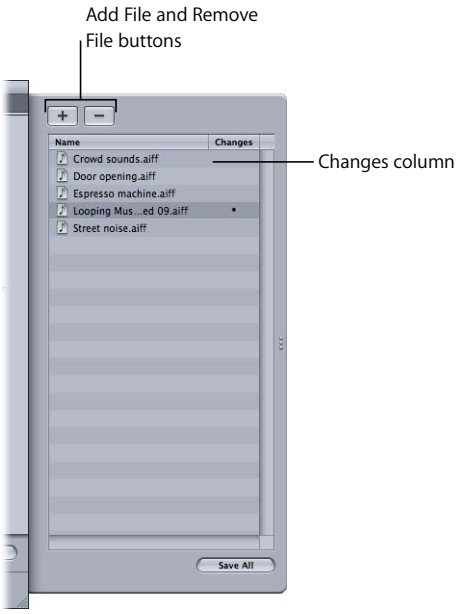


The Transients tab includes the following controls:

- *Transient Division pop-up menu:* Sets the beat value at which Apple Loops Utility detects transients.
- *Sensitivity slider:* Sets the degree of sensitivity at which Apple Loops Utility detects transients.

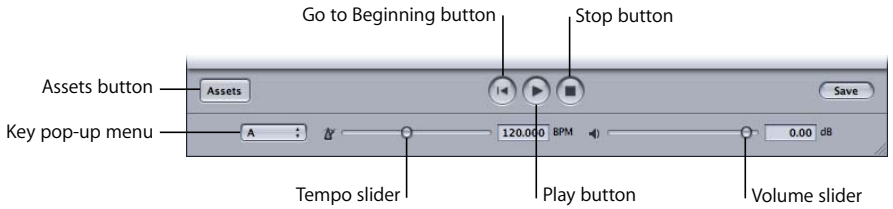
Assets Drawer

The Assets drawer lists the files open in Apple Loops Utility. The drawer, which is open when you open Apple Loops Utility, contains a Name column with the name of each open file, and a Changes column, which indicates any files to which you have applied changes.



Playback and File Management Controls

The bottom of the Apple Loops Utility window contains a set of playback controls so that you can listen to the file in Apple Loops Utility. The playback controls do not affect the file's tags, only the playback of the selected file.



- *Go to Beginning button:* Starts playback from the beginning of the selected file.
- *Play button:* Plays back the selected file.
- *Stop button:* Stops playback of the selected file.
- *Key pop-up menu:* Transposes the selected file to a new key for playback.
- *Tempo slider:* Sets the playback tempo of the selected file. You can also enter a value in the field.
- *Volume slider:* Sets the playback volume of the selected file. You can also enter a value in the field.

When multiple files are selected, the playback controls are not available. You cannot play more than one file at a time.

There are two additional buttons at the bottom of the window, the Assets button and the Save button.

- *Assets button:* Shows and hides the Assets drawer.
- *Save button:* Saves your changes to the currently selected files in the Assets drawer.

Opening Files in Apple Loops Utility

You can open audio files from within Apple Loops Utility, or directly from a Soundtrack project. You can have up to 2000 files open at the same time. When you open files in Apple Loops Utility, the files are displayed in the File list of the Assets drawer.

To open an audio file in Apple Loops Utility, do one of the following:

- Choose File > Open, then select the file in the Open dialog.
- Choose File > Open Recent, then choose a file from the submenu.
- Click the Add File button in the Assets drawer.
- Drag files from the Finder to the Assets drawer.

To open an audio file from Soundtrack into Apple Loops Utility:

- Control-click the file in Soundtrack, then choose Open in Apple Loops Utility from the shortcut menu.

To open multiple files in Apple Loops Utility, do one of the following:

- Choose File > Open, then Shift-click the files in the Open dialog.
- Drag the volume or folder containing the files from the Finder to the Assets drawer.

You can have multiple Apple Loops Utility windows open at the same time so that you can compare different files. Each time you open an Apple Loops Utility window, an Open dialog appears, letting you choose the file or files to open in that window. You can change the open window behavior in the Apple Loops Utility Preferences window. See "Apple Loops Utility Preferences" on page 184 for more information.

Tagging Files in Apple Loops Utility

To tag files, you select the files in the Assets drawer, and then make changes to the selected files' tags in the Tags tab. When you change the settings in the Tags tab, the changes are applied only to the currently selected files.

When you make changes to a file's tags, a dot appears in the Changes column next to the filename to indicate that the file has been changed. You can select a file or group of files and make one or several changes, and then select another file or group of files and make different changes. Apple Loops Utility remembers all the changes you make as you work with different files. When you finish making changes, you can save changes to only the currently selected files, or save changes to all files marked in the Changes column of the Assets drawer.

Note: Changing a file's tags has no effect on the actual audio data recorded in the file. Changing the tag for the number of beats, for example, only changes the information used when Soundtrack searches for files, not the actual number of beats recorded in the audio file. Similarly, changing the tag for key has no effect on the actual musical key of the audio file.

To tag a single audio file:

1. Select the file in the Assets drawer. (If the drawer is closed, click the Assets button to open it.)

   Note: When a single file is selected, you can use the Up and Down Arrow keys to move up and down the files in the Assets drawer. You can listen to the file using the playback controls.

2. Make the changes you want to the file's tags in the Tags tab.

   See "Tags Tab" on page 175 for information about the options in the Tags tab.

3. Click Save to save changes to the selected file, or click Save All to save all changes.

Tagging Multiple Files

When multiple files are selected, only the tags that apply to all the selected files can be changed. Items in the Tags tab that do not apply to all the currently selected files are dimmed and unavailable.

Each tag has a checkbox. Select the checkbox next to the tags for which you want to save changes.

To tag multiple files:

1. Select the files in one of the following ways:
   - Shift-click to select adjacent files in the Assets drawer.
   - Command-click to select nonadjacent files in the Assets drawer.
   - Press Command-Shift-A to select all files in the Assets drawer.
2. Make the changes you want to the available tags for the selected files in the Tags tab.

   See "Tags Tab" on page 175 for information about the options in the Tags tab.
3. Select the checkboxes next to the tags for which you want to save changes.
4. Click Save to save changes to the selected files, or click Save All to save all changes.

There are many keyboard shortcuts to simplify the task of tagging files. For a complete list of keyboard shortcuts, see "Apple Loops Utility Keyboard Shortcuts" on page 185.

Working with Transients

Transients are the points in an audio file where beats occur. Typically, transients occur at the widest areas of a waveform in the waveform display. During playback, Soundtrack adjusts looping files using a technique called *stretching* to achieve the best audio quality, based on the loop's transients. Non-looping files are not affected by stretching.

When you open a file in Apple Loops Utility, it looks for transients at every 16th note position, based on the file's tags for tempo and the number of beats. You can change the beat value at which Apple Loops Utility detects transients using the Transient Division pop-up menu.

To display a file in the Transients tab:

- Select the file in the Assets drawer, then click the Transients tab.

The Transients window can display only one file. If multiple files are selected, no waveform is displayed in the window. The waveform display in the Transients tab displays both the transients detected by Apple Loops Utility and transients you add to the file. You can add transients and move existing transients in the Transients tab.

To add a new transient:

- Click in the darker area above the Beat ruler in the waveform display.

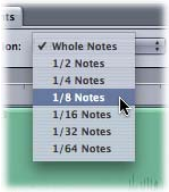
To move a transient marker:

- Drag the marker by its handle in the area above the Beat ruler.

To change the beat value of detected transients:

- Choose a beat value from the Transient Division pop-up menu.

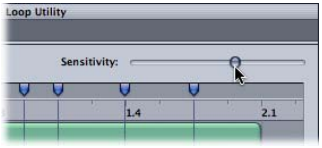
Choosing a larger beat value results in fewer transients being detected. Choosing a smaller beat value results in more transients being detected, if they are present in the audio recorded in the file.



Sometimes transients occur at points in the audio file other than on a beat value. You can have Apple Loops Utility detect additional transients in the file using the Sensitivity slider. When you increase the sensitivity of transient detection, Apple Loops Utility considers points of higher amplitude in the waveform as transients, regardless of whether or not they occur at a beat value.

To change the sensitivity of transient detection:

- Drag the Sensitivity slider to the left to decrease the sensitivity, or to the right to increase the sensitivity of transient detection.



To remove a transient, do one of the following:

- Click the transient's handle in the area above the Beat ruler, then press the Delete key.
- Drag the transient out of the area above the Beat ruler.

Saving Changes to Files

When you save changes in Apple Loops Utility, you can save changes to only the currently selected files, or to all files marked in the Changes column of the Assets drawer. Any other file tags are unchanged. This is especially useful when working with a large group of files.

When saving multiple files, the checkbox next to the tag must be selected if changes to that tag are to be saved. For information about tagging multiple files, see "Tagging Files in Apple Loops Utility" on page 180.

To save changes to the currently selected files:

- Click the Save button.

Saving changes to a large number of files may take several minutes.

To save all changes:

- Click the Save All button in the Assets drawer.

To save multiple files to the same directory:

1. Choose File > Save As.
2. Navigate to the directory where you want to save the files, then click Save.

When you save multiple files using the Save As dialog, the files are saved to the selected directory, and their names are unchanged.

When you save changes to files in the WAV format, by default they are converted to the AIFF format and saved in the same location as the original WAV files. The new AIFF files have the same name as the WAV files, but with the .aiff file suffix. You can change this default behavior in the Apple Loops Utility Preferences window. See the following section, "Apple Loops Utility Preferences," for more information.

Removing Files from the Assets Drawer

You can remove files from the Assets drawer.

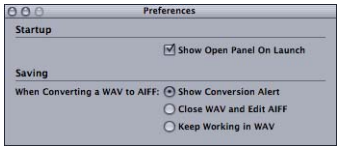
To remove files:

- Select the file or files in the Assets drawer, then click the Remove File button at the top of the drawer (or press the Delete key).

If you remove files to which you have applied changes, a dialog appears letting you choose whether to save or discard your changes.

Apple Loops Utility Preferences

You can set preferences for the startup behavior and default file saving behavior in the Apple Loops Utility Preferences window.



Startup

- *Show Open Panel On Launch:* When selected, an Open dialog appears each time you open Apple Loops Utility.

Saving

- When Converting a WAV to AIFF:
  - *Show Conversion Alert:* Shows the conversion alert dialog when you try to save a WAV file.
  - *Close WAV and Edit AIFF:* Automatically converts the WAV to an AIFF, closes the WAV file, and opens the AIFF for editing.
  - *Keep Working in WAV:* Leaves the WAV file open.

Apple Loops Utility Keyboard Shortcuts

General and File

Key command	Function
⌘ + N	Creates a new, blank Apple Loops Utility window and opens the Open dialog.
⌘ + O	Opens the Open dialog, from which you open files in Apple Loops Utility.
⌘ + W	Closes the current window.
⌘ + shift + W	Closes the selected files.
⌘ + S	Saves changes to the currently selected files. If any of the files are WAV files, a dialog appears asking if you want to continue editing the files as WAV files or save them as AIFF files.
⌘ + shift + S	Opens the Save As dialog to save the currently selected file with a new name.
⌘ + option + S	Saves all open files.
↑	Selects the file above the current file in the Assets drawer.
↓	Selects the file below the current file in the Assets drawer.
⌘ + shift + A	Selects all files in the Assets drawer.

Navigation

Key command	Function
F1	Makes the Tags tab active.
F2	Makes the Transients tab active.
F3	Makes the Assets drawer active.

Key and Scale Type Tagging

Key command	Function
esc	Turns on keyboard tagging.
A	Sets the key to A.
shift + A	Sets the key to A# (A-sharp).
B	Sets the key to B.
C	Sets the key to C.
shift + C	Sets the key to C# (C-sharp).
D	Sets the key to D.
shift + D	Sets the key to D# (D-sharp).
E	Sets the key to E.
F	Sets the key to F.
shift + F	Sets the key to F# (F-sharp).
G	Sets the key to G.
shift + G	Sets the key to G# (G-sharp).
M	Sets the scale type to Major.
shift + M	Sets the scale type to Minor.
shift + B	Sets the scale type to Both.
N	Sets the scale type to Neither.

Descriptor Tagging

For the following descriptor keyboard shortcuts, pressing the key once selects the first (left) item, pressing the key again selects the second (right) item, and pressing the key a third time selects Neither (the center button).

Key command	Function
1	Single/Ensemble
2	Part/Fill
3	Acoustic/Electric
4	Dry/Processed
5	Clean/Distorted
6	Cheerful/Dark
7	Relaxed/Intense
8	Grooving/Arrhythmic
9	Melodic/Dissonant
F5	Sets Batch Tagging to All.
F6	Sets Batch Tagging to None.

Transients

Key command	Function
=	Increases sensitivity.
-	Decreases sensitivity.
shift + =	Increases sensitivity five times.
shift + -	Decreases sensitivity five times.
←	Nudges the selected marker by one pixel to the left.
→	Nudges the selected marker by one pixel to the right.
⌘ + ←	Selects the previous marker.
⌘ + →	Selects the next marker.

Soundtrack Keyboard Shortcuts

General and File

Key command	Function
⌘ + N	Creates a new, blank project.
⌘ + O	Opens the Open dialog.
⌘ + shift + W	Closes all open projects.
⌘ + S	Saves the current project.
⌘ + shift + S	Opens the Save As dialog to save the project with a new name.
⌘ + control + S	Opens the Save As dialog to save a copy of the project with a different name.
⌘ + B	Adds the selected audio file to the Bin.
⌘ + Q	Closes all projects and quits Soundtrack.

Windows, Tabs, and Layouts

Key command	Function
⌘ + 1	Opens the Video tab of the Utility window.
⌘ + 3	Opens the Project window.
⌘ + 4	Opens the Browser tab of the Media and Effects Manager.
⌘ + 5	Opens the Effects tab of the Media and Effects Manager.

Key command	Function
⌘ + M	Minimizes the active window.
⌘ + H	Hides Soundtrack.
⌘ + option + H	Hides all other windows.
⌘ + ,	Shows the Preferences window.
⌘ + shift + ?	Opens the Soundtrack User Manual.
⌘ + shift + [	Moves to the previous (left) tab.
⌘ + shift +]	Moves to the next (right) tab.
F1	Switches the project layout to the Basic layout.

Project Playback and Setting the Playhead

Key command	Function
space	Starts playing the project.
space	If the project is playing, stops project playback.
return	Moves the playhead to the beginning of the project, or to the beginning of the playback region if it is active.
shift + return	Starts playback from the beginning of the project.
option + M	Moves the playhead to the position of the preceding marker.
shift + M	Moves the playhead to the position of the next marker.
⌘ + ←	Moves the playhead to the position of the previous frame in the video clip.
⌘ + →	Moves the playhead to the position of the next frame in the video clip.

General Editing

Key command	Function
⌘ + Z	Undoes the last command.
⌘ + shift + Z	Redoes the last undone command.
⌘ + X	Cuts the selected item.
⌘ + shift + X	Ripple cuts the selected item.
⌘ + C	Copies the selected item.
⌘ + V	Pastes the cut or copied item.
delete	Deletes the selected item.
⌘ + D	Duplicates the selected item.
⌘ + A	Selects all items in the window.
⌘ + shift + A	Deselects all items in the window.
N	Turns snap on or off.

Editing Audio Clips in the Timeline

Key command	Function
⌘ + option + V	Opens the Paste Repeat dialog so that you can paste multiple copies of the cut or copied audio clip.
S	Splits the selected audio clips under the playhead.
J	Joins the selected clips.
⌘ + F	Crossfades the selected clips.

Adjusting Audio Clips in the Timeline

Key command	Function
option + ←	Nudges the clip or envelope point to the left by one pixel.
option + →	Nudges the clip or envelope point to the right by one pixel.
option + ↑	Nudges the envelope point up by one pixel.
option + ↓	Nudges the envelope point down by one pixel.
option + shift + ←	Shifts the clip or envelope point to the left by one gridline.
option + shift + →	Shifts the clip or envelope point to the right by one gridline.
option + shift + ↑	Shifts the envelope point up by five pixels.
option + shift + ↓	Shifts the envelope point down by five pixels.

Navigating in the Timeline

Key command	Function
↑ or ⌘ + =	Zooms in horizontally to the next zoom level.
↓ or ⌘ + -	Zooms out horizontally to the next zoom level.
⌘ + +	Zooms in vertically to the next zoom level.
⌘ + shift + _	Zooms out vertically to the next zoom level.
option + Z	Zooms in on the current selection.
⌘ + 0	Returns to the default zoom level.
shift + Z	Fits the project in the display size.
⌘ + 6	Reduced track height
⌘ + 7	Small track height

Key command	Function
⌘ + 8	Medium track height
⌘ + 9	Large track height

Tracks and Markers

Key command	Function
⌘ + T	Adds a new track to the Timeline below the selected track.
⌘ + control + T	Adds a new bus to the Timeline below the selected bus.
⌘ + option + T	Adds a new output to the Timeline below the selected output.
⌘ + shift + T	Removes the selected track, bus, or output from the Timeline.
option + B	Inserts a beat marker at the current playhead position.
M	Inserts a time marker at the current playhead position.
control + M	Adds time markers at the beginning and end of selection.

Recording

Key command	Function
control + 1	Makes Take 1 the active take for the selected clip.
control + 2	Makes Take 2 the active take for the selected clip.
control + 3	Makes Take 3 the active take for the selected clip.
control + 4	Makes Take 4 the active take for the selected clip.
control + 5	Makes Take 5 the active take for the selected clip.
control + 6	Makes Take 6 the active take for the selected clip.
control + 7	Makes Take 7 the active take for the selected clip.
control + 8	Makes Take 8 the active take for the selected clip.
control + 9	Makes Take 9 the active take for the selected clip.

Solutions to Common Problems and Customer Support

If you run into problems while working with Soundtrack, there are several resources you can use to find a solution.

- *This appendix:* This appendix includes information about some of the most frequent issues users encounter.
- *Late-Breaking News:* A late-breaking news page in the Soundtrack Help menu provides last-minute information that didn't make it into the manual. Be sure to consult this help page as soon as you install or upgrade Soundtrack.
- *AppleCare Knowledge Base:* AppleCare Support maintains a database of common support issues that is updated and expanded to include new issues as they arise. This is an excellent, free resource for Soundtrack users. To access the AppleCare Knowledge Base, go to the AppleCare support page at http://www.apple.com/support.
- *AppleCare Support:* There are a variety of support options available to Soundtrack customers. For more information, see the *Apple Professional Software Service & Support Guide* that comes with your Soundtrack documentation.

Solutions to Common Problems

Audio Files and Audio Interfaces

Several factors can affect performance when working with digital audio files. Observing the following guidelines will help you maintain the highest possible performance when working with Soundtrack projects:

- Because digital audio files require intensive processing by the computer's processor, do not perform other processor-intensive tasks while working in Soundtrack.
- External audio interfaces connected to your computer can be susceptible to *latency,* a noticeable delay between the time the audio signal is produced and the time it reaches the computer. Some hardware and software manufacturers offer guidelines for reducing the amount of latency for their equipment. Be sure to read the documentation that came with your audio interface.

- If you are using a USB audio interface, make sure the audio interface is directly connected to your computer. Do not connect a USB audio interface through a USB hub, or chain it through another USB device.
- If you experience unwanted noise or hiss, check the connections between your computer and any external audio devices. Refer to the documentation that came with each device for any additional instructions on dealing with noise.

Eliminating Recording Latency

You can use the Latency Compensation setting in the Preferences Recording pane to eliminate any latency inherent in your recording device. You calculate the latency by playing a loop and recording it at the same time, as described below:

1. Use an appropriate cable to connect the audio output port you are using to the input port for the device from which you plan to record.
2. Choose a loop with a large number of transients, such as a drum loop.
3. Set the tempo to 60 bpm (to simplify the latency calculation).
4. Click the Record Enable button in the header of the track to which you want to record.
5. In the Recording tab, set the Input device to the recording device.
6. Set Monitor to None and ensure that hardware monitoring on your recording device is turned off. You may also need to reduce input or output volumes of your devices in order to avoid feedback.
7. Click the Record button and let the loop play for a few seconds. Then click Stop.
8. Visually compare the original track and the newly recorded track. Zoom in to identify a place where the tracks have identical waveforms but are not lined up. Set the playhead at the corresponding identical points on the two waveforms and subtract the two Beats field values. This is the latency in milliseconds. If the recorded audio is late (to the right), you enter a positive value; if it's early (to the left), you enter a negative value. For example, if the location in beats of the selected point in the source loop is 1.2.002 and the location in beats of the corresponding point in the recording is 1.2.008, the latency is 6 milliseconds.
9. Enter the latency value in the Recording Preferences pane.
10. Mute the recorded track and test record the loop again to make sure the latency is eliminated.

Calling AppleCare Support

Included in your Soundtrack package is documentation about the support options available from Apple. Several levels of support are available, depending on your needs.

Whatever your issue, it's a good idea to have the following information immediately available. The more of this information you have ready to give to the support agents, the faster they will be able to address your issue.

- The registration number that came with Soundtrack. This number is different from the software serial number that is used to activate your copy of Soundtrack.
- Which version of Mac OS X you have installed. This information is available by choosing About This Mac from the Apple menu.
- The version of Soundtrack you have installed, including updates if applicable. The version number can be viewed by choosing Soundtrack > About Soundtrack.
- The model of computer you are using
- How much RAM is installed in your computer, and how much is available to Soundtrack. You can find out how much RAM is installed by choosing About This Mac from the Apple menu in the Finder.
- What other third-party hardware is connected to or installed in the computer, and who are the manufacturers. Include hard disks, graphics cards, and so on.
- Any third-party plug-ins or other software installed along with Soundtrack

AppleCare Support can be reached online at:
http://www.apple.com/support/soundtrack

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